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ORIGINAL ARTICLES.

A STUDY OF GUNSHOT-WOUNDS WITH REGARD TO THE CAUSATION OF UNCONSCIOUSNESS.

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IN several trials for murder, in which I have been consulted, the question has arisen whether, after a given gunshot-wound, the person wounded could have offered any resistance or committed any aggressive act against the one who had injured him. The utter lack of any literature bearing directly upon this point has led me to write this article, with the hope that it may at least serve as a nucleus about which such information as is obtainable concerning these points may be gathered.

In certain cases the question of the production of such unconsciousness as would preclude any voluntary act upon the part of the person shot is very easily answered. If the brain is extensively disorganized or the cervical cord severed high up, or if the great ganglia of the sympathetic system or the region about the base of the heart are violently disrupted, as by a large missile passing through the chest and abdomen, we would be perfectly safe in stating that unconsciousness, or, we might almost say, death, would result so quickly as to prevent any voluntary act on the part of the injured person. It should be noted, however, that to produce such unconsciousness the extent of the injury below the cervical cord must be enormously greater than in or above that region. Thus in one of my cases a single pellet of shot from a shotgun caused instant death from its passage through the cord at the atlo-axoid articulation, being far more quickly operative in this respect than would the destruction of all of the body below this point have been.

I have many times seen small animals instantly killed by a heavy rifle-ball when the sole injuries were in the abdominal cavity, or the parts posterior to it. In these cases the shock from the extensive tearing of the tissues, exerted through the solar plexus, produced practically instantaneous death. And even in animals of the size of a deer I have seen death as quickly produced when the rifle-ball of large caliber had passed lengthwise through the cavities of the chest and abdomen; although it does not occur, I believe, when only one of these cavities is invaded

transversely, unless the base of the heart is involved. This matter we shall consider later. It would seem that the relative amount of damage to the internal organs must be very large for the production of immediate unconsciousness, while, through the action of shock and hemorrhage, such a state may result after an interval from very small wounds.

Although I have had no opportunity of observing a wound by a large missile, in man, involving the whole body lengthwise, analogous to those just mentioned in animals, I anticipate that such injury would produce practically instant death, regardless of lesions of the heart, chiefly because the damage to the sympathetic system would necessarily be so severe. There is obviously much greater opportunity for extensive injury to the internal organs in the case of such a longitudinal wound than in a transverse one, which would commonly invade but one cavity. In fact, many of those wounded transversely, in either of the cavities mentioned, if only the heart, the spinal cord, and the great blood-vessels escape injury, not only do not suffer unconsciousness, but recover, either with or without operative interference, as abundant reports of cases prove.

To the best of my knowledge, no injury to limb or limbs, such as would be possible from any ordinary gunshot-wound (that is, excluding total destruction by missiles from cannon or other ordnance, which injuries do not here concern us), would cause instant unconsciousness, although the severest shock may result from extensive fracture of bone, especially in conjunction with severe hemorrhage. But this would not preclude voluntary action on the part of the person injured for a certain time afterward. In fact, I have seen repeated instances in antelope, elk, and deer, in which extensive gunshot-injuries, approaching utter disorganization of one or more limbs, existed, even including in some cases practically a whole quarter, without apparently interfering very much, for the first few minutes, with the speed of the animal as it endeavored to escape. In fact, the severance of both front legs below the knee, or of both hind ones below the hock, or the complete destruction of any one quarter, so far as the bony parts are concerned, will not prevent the temporary escape of an antelope from the hunter if he be afoot. This common experience proves.

The popular idea seems to be that any bullet-

wound of the heart produces instant death. I have recorded elsewhere¹ several instances in game animals in which long distances were covered after such wounds, and so many cases² have been recorded in man of the prolongation of life for many hours, or even of recovery, after being shot through the heart, that it is needless to quote them here. My own experience in the study of cardiac wounds, in game-animals chiefly, for I have seen but few in man, would lead me to the conclusion that transverse wounds through the lower portions of the heart, giving rise to punctures rather than extensive lacerations, do not commonly cause a cessation of life for a time varying from some considerable fraction of a minute to many minutes or even hours, and especially if the puncture be valvular in character, so as to prevent the loss of much blood. If, however, the wound involve the base of the organ, with extensive laceration of the surrounding parts, death is practically instantaneous. It would seem that injury to the muscular walls of the organ is much less efficient in the production of immediate death than destruction of the cardiac nervous mechanism, serious irritation of the latter producing almost instant death from shock.

It is not necessary to quote here in detail the instances, chiefly from the hunting-field, upon which I have based these conclusions, but it may be briefly stated that two wild geese flew, respectively, one-fourth and three-fourths of a mile after being shot through the heart each with a single pellet of BB shot, the base being in each instance uninjured. In several instances antelopes and deer ran several rods after being shot with a rifle-ball in similar manner; while, on the other hand, death was practically instantaneous in several of these animals in which the base of the heart was extensively lacerated.

In one murder-trial, in which I testified, a woman of twenty-two years of age was shot with a 38-caliber revolver, the ball entering at the left acromion process, and ranging downward and inward through the base of the heart. From the position of the body and the circumstantial evidence, it seemed certain, as was stated to the jury, that she had not moved further than to fall back upon the bed after receiving the wound.

But, on the other hand, death *may* result instantly from a wound of the precordial region; or even, according to Erichsen, from the concussion resulting from the discharge of a pistol containing powder alone, if held directly over the heart, as it does

occasionally after a blow upon the precordial region. In such a case one could only say that unconsciousness might well have resulted from the injury, and, in the lack of any other discoverable cause of death, that it had almost certainly done so. It is well to state here, however, the fact so commonly recognized by surgeons, that in times of excitement one may receive an injury which will shortly prove fatal, and yet not be aware of it for some time—perhaps even for several minutes. It would appear that the nervous system is so highly tuned at such times that it does not respond to reflex irritations as readily as in the absence of excitement. A case illustrative of this statement will be found under brain-injuries in this article.

It is in regard to injuries involving the brain that the question of the production of immediate unconsciousness assumes the greatest interest. We may state broadly that if the medulla or the great centers at the base of the brain are wounded by a bullet, instant unconsciousness must result; with any other wounds involving the brain-substance it will with very great probability result. But there is a very broad area of uncertainty. Many instances have been recorded in which the entrance of a small bullet into the anterior part of the brain has not prevented the firing of a second shot on the part of the suicide. Personally, I have not observed such a case, however. But, aside from injuries by the smallest missiles in the anterior parts of the brain, we may speak with almost absolute certainty with regard to the production of unconsciousness, for the jar to the brain from the blow of the bullet upon the skull would produce such a result even if the damage to the brain were not sufficient to do so.

Many injuries to the brain from bullets of moderate size and low velocity do not cause more than a temporary loss of consciousness, and the subjects are seen by the surgeon, after the lapse of half an hour or more, apparently sound of mind. These are the cases in which the ball has lost its momentum in passing through the skull, and has consequently done little damage to the brain-substance excepting to make a passage for itself for a short distance into the brain. It is apparently well established that, in the case of the rifle-bullet of high velocity, and especially if fired from the modern military weapons using nitro-powders, and giving an enormous initial velocity to the bullet, the transmission of the force from the displaced particles of brain (and this rule applies to any other of the soft organs as well) to the adjacent parts is such as to disorganize much of the tissue surrounding the original track of the missile. Under these circumstances a much slighter wound would be necessary to produce unconsciousness or death than in the case of a bullet of low velocity, especially if it were light in weight. Thus I have

¹ Scribner's Magazine, October, 1891: "Actions of Wounded Animals." Recreation, February, 1895: "The Vulnerable Spot."

² Sanson and Ollivier alone report twenty-nine cases in which patients lived from four to twenty-eight days after wounds of the heart.

recorded elsewhere¹ an instance of instant death in a grizzly bear, an animal certainly as tenacious of life as any we have, from a mere furrow less than a quarter of an inch in depth through the cortex of the brain, without injury of the skull excepting the removal of the bone necessary for the production of this furrow. The jar to the brain from a bullet of great velocity, as in this case, was alone sufficient to injure the organ irreparably. In a similar manner I have known a deer to be killed by the impact of a heavy rifle-ball against one horn, although there was no evidence of fracture of the skull. On the other hand, game animals often escape after such injuries, not directly involving the brain, although temporarily rendered unconscious, as I have observed in several instances, the diagnosis undoubtedly being concussion of the brain.

Slight injury to the brain, and especially if it be unilateral, then, may not produce unconsciousness. It is not very uncommon for a missile from a heavy weapon to strike the skull, and be deflected without the production of such a state. Near the town in which I formerly practised, the town-marshal shot at a negro who resisted arrest, at a distance of only a few feet, with a 44-caliber revolver, striking the culprit on the side of the head. The wound showed that the ball struck the skull and plowed along under the scalp for several inches before emerging, but it did not even knock the negro down, and no unconsciousness followed later. I once examined an express-messenger who had been shot in the occipital region by a weapon of similar size, while seated at his desk in the car. The blow was a very glancing one and did not produce unconsciousness, and probably, as in the case of the negro, because it did not strike with sufficient directness. A direct wound on the skull from such a weapon commonly penetrates, as experience shows. In the Milton Smith case in Denver, the unusually thick skull of a powerful negro was practically disorganized by a bullet from a revolver similar to those already mentioned, the missile having struck at a right angle with the forehead. Still, in those cases in which any bullet of even moderate size has impinged upon the skull, we should commonly look for at least a temporary stunning as a result, as the great majority of such cases would suffer from concussion of the brain. We do not, of course, include mere scalp-wounds in this statement. One must remember how many cases we see in which stunning has resulted from comparatively slight blows upon the cranium, even those given by the fist. Comparing the concentrated and forceful blow of the bullet with the causes so often operative in the production of unconsciousness, it may easily be seen that the bullet must

commonly stun the patient if a firm part of the skull be struck.

In one case,² in which the ball from a 38-caliber revolver passed into the right side of the neck and thence upward toward the right side of the skull, and in which testimony was introduced to show that the patient was unconscious two minutes after the shot, I declined to say more than that such a wound might have produced this result immediately, there being, in my judgment, insufficient ground for the formation of a positive opinion. Dr. Parkhill had been unable to definitely locate the ball, and it was uncertain, according to his testimony, whether it had struck the base of the skull or not. Even if it had, its force might have been so reduced as to prevent its producing a serious jar to the contents of the cranium. Furthermore, it is well known that a jar of the side of the neck, whether by its influence on the cord, on the pneumogastric nerves, or otherwise, does not seem to be established, not infrequently suspends consciousness for a time, as so often recorded in prize-fights. The evidence in this case finally left no room for doubt on this point. It was shown by the conditions under which the wound in the culprit's neck was inflicted that he could not have caused it himself, and hence it must have been caused by the woman who was found dead in the room with him. As she had received a wound causing instant death, it became apparent that the story of the shooting as given by the man on trial must be true. This was that the woman had first shot him, that he had struggled with her for the possession of the weapon, and that in the struggle it had been discharged, killing her instantly, as was afterward learned, and that after that he knew nothing until he found himself in the hospital.³ In this case it seems probable that the subject retained consciousness longer than he might otherwise have done, because of the danger of his position.

As bearing somewhat upon the matter we are considering, I will quote here a very interesting case, previously reported, concerning which I was consulted some three years ago. A man on horseback was shot in the neck by one on foot, a single pellet of shot severing the cord at the atlo-axoid articulation. I was asked if he could have retained his grasp upon a knife he was known to have held in his hand at the time of the shooting. There was a suspicion that the knife he carried had been secreted and a larger one substituted, in order to make his killing more justifiable, as the former knife was

¹ Reported in "Gunshot Wounds in their Medico-Legal Relations." International Medico-Legal Congress, Chicago, 1893.

² See "Gunshot-wounds, Accidental, Homicidal, or Suicidal," by the author, presented at the Medico-Legal Congress, New York, 1895.

³ Scribner's Magazine, October, 1891.

believed to have been only a pocket-knife. He had been the attacking party in the affray. The large weapon was merely laid in the hand, not being grasped by the fingers. As a severance of the cord in this region would instantly relax all voluntary muscles involved, I stated that he could not have retained his grasp upon the handle, and the prisoner confessed that he had substituted the large knife for the small one. He was convicted of manslaughter.

We have dealt chiefly with wounds that *must* produce unconsciousness. It should be stated that other injuries than those considered *may* produce such a state. I should anticipate that the passage of a bullet through the upper dorsal region, and perhaps in most instances through any part of the spinal column above the sacrum, would render the victim unable to offer any resistance to an adversary, although probably not preventing the action of his mind for a time. There is such a vast difference in different men in the amount of vitality exhibited under trying circumstances that it is impossible to formulate any rules for the consideration of such cases. We may, however, summarize the results we have reached as follows (I am under obligations to Dr. J. T. Eskridge for a critical review of the conclusions herewith presented, which he informs me meet with his approbation):

Consciousness must be immediately suspended after gunshot-wounds involving the medulla, the cervical cord above the origin of the phrenic nerve, the great centers at the base of the brain, or the region about the base of the heart, if, in the latter case, the parts are severely lacerated. It will with very great probability be suspended after wounds involving very extensive injury about the solar plexus, or after any injury, by a missile of considerable size, affecting any part of the brain, unless it be the anterior and lateral parts. Temporary unconsciousness at least will probably follow any wound of the brain-substance, or any serious jar to the cervical cord, by a bullet of even moderate size; and temporary stunning or even death often follows the shock from the impact of a bullet against the skull, without gross damage to the brain, and may follow the concussion of the precordial region, caused by the discharge of a weapon in close contact, even though no penetrating wound be produced. In the majority of other injuries from the cause we are considering unconsciousness is secondary to loss of blood, shock, or a combination of these two causes. But in any injury to the spinal column involving the cord, and more especially in the upper portions, although consciousness may be retained, it is not likely that any serious resistance could be offered by the person so injured, excepting that the hands might still be of use in case the lesion were below the upper dorsal region.

NEPHRITIS VIEWED FROM THE STANDPOINT OF INDIVIDUAL CELL-LIFE.

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IN spite of the immense array of medical literature of the past and present, and the accumulated experience of the profession, the physician of to-day finds himself constantly confronted with his inability to contend successfully with innumerable physical conditions. This is evidently due to the fact that we recognize and treat disease from the symptomatology of defined organs, as the heart, liver, lungs, stomach, and intestines, and lose sight of the primarily diseased or irritated *organs*, viz., the ultimate protoplasmic particles or cells of which these structures are composed. The study of cell-life proves conclusively that the individual cell is an organ in itself. It must receive its food-materials; it must construct, generate, and eliminate—in short, its functions are as well defined as those of the major organs. These functions the most minute cells are capable of executing thoroughly under normal conditions, *i. e.*, the absence of any form of morbid irritation; but if irritated their functions become perverted. Thus we see that as all tissues of the body are made up of these innumerable minute cell-organs, upon *their health* depends directly the health of the individual.

As these facts are self-evident, we can now apply them to nephritis—that disease which, according to the literature of to-day, is a disease of the *kidney*, followed by various constitutional changes. We shall not discuss the various classifications of nephritis, as they are based solely upon the degree of structural change of the kidney.

The question now arises, Is nephritis or albuminuria primarily a disease of the kidney? We are prepared to state that it is not, and that upon this fact rests all previous failure of treatment. Primarily nephritis is acute or chronic irritation of the cell-organs of the entire body, causing cell-vomiting or the elimination of cell-food, *i. e.*, *albumin*.

We should first understand that disease is irritation. Irritate the lungs and we get the resulting cough and expectoration; irritate the intestines and we get increased discharge; irritate the stomach and we get vomiting. If this is true of the large organs, as the lungs, intestines, and stomach, is it not equally true of the individual cells throughout the entire body? When an irritant is brought in contact with a cell, as occurs through the medium of the circulation in all diseases, we have perversion of function, and a condition similar to that of an irritated stomach—an inability to utilize its furnished materials to promote nutrition, and a throwing off or vomiting of these. In the case of the stomach it is the crude food-materials, while in the cell-

organs it is the peptonoids or albuminoids furnished to them by the stomach—the evidence of their refusal to utilize these being shown by their presence in the urine and all other sources of elimination.

The recognized causes of nephritis are scarlet fever, pregnancy, alcoholism, mental anxiety, all the eruptive fevers, diphtheria, gout, pyemia, acute articular rheumatism, long-continued cystitis, extensive burns of the skin, malaria, chronic dysentery, ulceration of the bowels, habitual exposure to moisture and cold, cantharides, turpentine, oil of mustard, phosphorus, ars-nic, silver nitrate, lead, and mercury. Each of these causes is a specific irritant to the individual cell-organs of the *entire body*, as is evidenced by the symptoms produced. For example, in scarlet fever we have the chill, vomiting, irritation of the fauces, high fever, rapid pulse, heat of skin, bright scarlet rash, headache, great restlessness, and delirium. In acute articular rheumatism there is chill, pain, and stiffness of the joints, nausea, vomiting, hyperpyrexia, profuse acid sweats, and scanty high-colored, albuminous urine. Or if we take alcoholism as an example, we find general increase of fibrous or areolar tissue, followed by contraction and destruction of secreting cells, gastric catarrh, anesthesia and hyperesthesia, delirium, acute and chronic mania, and numerous organic inflammatory diseases. In mercurial poisoning these are its local and constitutional effects: its action upon the red corpuscles even in minute doses, its marked effect upon the nervous and digestive systems, the action on the salivary glands, fetid breath, and emaciation.

Given now an irritant producing acute inflammation, the tendency of the latter is to become chronic, and our efforts to prevent this have been directed to treating the symptoms of the affected parts, and we have failed to extend our treatment to the cell-organs, which are irritated throughout the entire system. Just as surely as the tendency of inflammation in major organs, as lungs, stomach, and intestines, etc., is to become chronic without proper treatment, so surely will the individual cell-organ run into chronic inflammation if the primary irritation is not given a part of our care. In acute gastritis we have acute vomiting; in acute cell-irritation we have acute *cell-vomiting*, or acute albuminuria. In chronic gastritis we have chronic vomiting, and chronic cell-irritation produces chronic cell-vomiting, or chronic albuminuria, resulting in chronic nephritis. Acute gastritis becomes chronic because we have failed to soothe and palliate it; acute cell-irritation becomes chronic from the same cause.

Viewed from this standpoint, albumin in the urine is the direct symptom of either acute or chronic general cell-irritation; the hypersensitive condition of cells causes them to repel or throw off their good

material. Albuminuria and the changes in the kidneys are but secondary.

If from irritation of the cell-organs we have perverted functions, or throwing off of cell-food, a resulting malnutrition of the cell must occur, and a consequent degeneration of the entire system. This is simply evidenced by the general conditions gradually evolved in nephritis, the proliferation of tissues of low vitality, the multitudinous degenerations, and general anasarca.

A food-substance taken into the stomach, if not accepted by it, is eliminated either by vomiting or by passage through the intestines more or less unchanged, frequently giving rise to destructive changes in the channel of elimination. Food-material likewise taken into the blood, if refused by the cell-organs, must necessarily be eliminated. As the kidney is the principal source of elimination of the products of the blood, it suffers in like manner.

Not only does the kidney suffer from being the avenue of elimination, but the structural changes found to exist in it are due to the presence of tissues of low vitality, constructed of badly nourished cells. Like changes may be found in all portions of the body; the primary enlargement and subsequent contraction of organs and the general sclerosis, the pale, flabby, edematous tissues are in themselves evidences of cell-improvement.

Simon, in his recent article on "Functional Albuminuria," or the "Albuminuria of Da Costa" (*New York Medical Journal*, September 14, 1895), after referring to the writers of the day on this subject, says: "After carefully surveying such literature, there can remain no doubt in one's mind that an albuminuria may occur in the absence of organic changes affecting any of the tissues of the body." Now, as the presence of albumin in normal urine must yet be proved, the so-called functional albuminuria is simply the result of general cell-irritation, and although the article referred to is full of evidence of such irritation, the author has failed to recognize it as the cause of the albumin being in the urine without structural changes taking place. He is very right, however, when he states that such a condition may result in chronic interstitial nephritis, with all its structural changes. All that is necessary is to let this primary acute cell-irritation, without structural change, become chronic.

In the treatment of nephritis our first duty is to remove the cause of the general cell-irritation, and, second, to soothe and palliate the irritated cells (as we soothe the irritated cells after a burn or external application of an irritant by bland ointments, oils, etc.).

In regard to general treatment, the promotion of all that tends to good hygienic conditions, the elimination of all forms of mental anxiety, rest, and diet, are all important. Medicinally, opium and

cod-liver oil are our sheet-anchors. Mental anxiety must be avoided, as it is a direct cause of cell-irritation and its resulting albuminuria. To be beneficial rest must be complete, not only bodily rest, but cellular rest. This calm and peaceful sleep will furnish us. By rest we do not mean the absolute "rest-cure" of Weir Mitchell, but the normal rest and sleep of the healthy animal. Sufficient moderate exercise in the open air must be secured for hygienic purposes.

The ordinary "milk-diet" would seem to be the best, as milk is a non-irritating form of food, and so it has proved to be in regard to decreasing the amount of albumin eliminated, but the general condition of the patient suffers because milk is an insufficient food to sustain the normal life of an adult, and contains too much water. Our ordinary food-stuffs are not irritating to cell-life in themselves; but are often made so when prepared in the usual palatable forms. Wholesome meat served rare, plainly prepared without condiments (salt in small quantities alone is allowable), should be taken freely. All the cereals may be used, but care must be exercised to avoid fermentative changes taking place in the stomach, as they may generate acids of an irritating character. Only a few vegetables are permissible, as a number of them generate products of irritation. The white potato we would recommend as the principal vegetable.

A general idea pervading all literature upon this subject is that the taking of nitrogenous foods directly increases the amount of urea in the blood. This is so, but it is not the taking of the nitrogenous foods that increases the urea, but the refusal on the part of the cells to assimilate and utilize the albuminoids furnished to them. Urea we do not consider to be alone the result of tissue-destruction, but also of food-destruction. Thus our efforts to rectify the amount of urea must not end by stopping the supply of nitrogenous foods (which are so important to the sustaining of the general health of our patient), but should also lead to allaying the irritation of the cells so that they may receive the albuminous products.

In regard to drugs, opium is best adapted to our wants, as our object is to allay cell-irritation. Entering directly into the cell-protoplasm, it soothes their hypersensitive condition, and secures the cellular rest that is all-important.

The opium should be given in as small quantities as will meet the indications, and should be continued indefinitely, Scanzoni and Loomis having amply demonstrated the safety and value of morphin, even in the most serious calamity of nephritis, *i. e.*, uremic coma.

At first there may be some resistance on the part of the cells to respond satisfactorily to the drug, as there is on the part of the stomach, but this is

overcome by its continuance. Morphin bimeconate is by far the preferable form of exhibiting the drug, as it is the most free from disagreeable effects.

Cod-liver oil is strongly indicated, because in doses suited to the powers of assimilation it improves the condition of the nervous system, causes a rapid increase of urine and perspiration, increases the appetite, improves nutrition, enhances the number of red blood-corpuscles, increases healthy cell-formation, and exerts a general alterative effect. In addition, its phosphorus, iodine, and bromine exist in organic combination capable of being readily appropriated by young cells. In case the stomach does not receive it kindly, we have the ready mode of introducing it into the blood by inunction and gentle massage. This plan should always be used if the stomach refuses the drug. We would strongly urge the avoidance of all irritating drugs, such as the pharmaceutical preparations of iron, the giving of quinin, strychnin, cantharides, digitalis, turpentine, arsenic, etc. Pilocarpin and mechanical purgatives are, however, permissible and of value if serious kidney-destruction has occurred.

EPITHELIOMA OF THE UPPER JAW.

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WHILE carcinomatous affections of the upper jaw, beginning in the antrum, are by no means common, they are yet of sufficiently frequent occurrence to be accurately described in the standard text-books on surgery, and would be easy of recognition by any careful observer, particularly if he were at all familiar with the affection as occurring in other parts of the body; but epithelioma beginning in the mucous membrane of the upper jaw is so rare an occurrence that the ordinary text-book writer has failed adequately to portray it.

In an examination of a number of standard authorities, while descriptions of the disease as occurring in the tongue, on the cheek, in the pharynx, on the palate, and in the larynx were full and accurate, yet in only one work, *viz.*, *Bond's Dental Medicine*, did I find any description that would throw light upon the case about to be described; and this author quotes Mr. Liston and Professor Mütter as both regarding carcinoma of the gums as exceedingly rare. According to his description, a carcinoma in the gum has the distinctive qualities of hardness, acute, lancinating pain, and inequality of surface; although one form may occur, presenting the appearance of a soft, spongy, bleeding fungus, accompanied by great sensitiveness and great pain. Carcinoma of the jaw, according to him, may occur in two forms—the occult and the open; the former generally preceding the latter

and presenting itself in the form of a hard, dense tumor of slow growth, seated in the glandular structure. At first this tumor is nearly insensitive, but subsequently causes sharp, darting pains; and as the disease progresses the skin adheres to the tumor, corrugates or puckers, changes color, and ulcerates.

The resulting ulcer is both painful and irritable; discharges a thin ichor, which is, in the majority of cases, devoid of fetid odor, except in the later stages. Its edges are hard and irregular, "reversed and contorted." The sore manifests no tendency to form healthy granulations, but spreads among the surrounding tissues, which successively harden and ulcerate and become carcinomatous. Lymphatics propagate the disease to the nearest glands, which are found swollen, indurated, and often ulcerated, and the pain is burning and scalding.

Sometimes such an ulceration occurs without the preceding scirrhus. When this is the case, the ulcer presents an even, smooth surface, with little secretion; the open sore rarely yields even to surgical remedies. Its cause is a matter of controversy; its origin is ascribed to a wound or a pinch, but this can only be occasioned when there is a constitutional tendency to the affection. That the disease is a degenerative one is evinced by the fact that it invariably occurs in the declining period of life, like all other forms of the disease; but while other forms have, in rare instances, occurred in youth (the late Professor Gross having observed an encephaloid of the antrum in a child of five years), I find no mention of the form we are considering occurring in early or middle life. Its relation to other degenerative diseases has not been thoroughly investigated. Charcot, however, significantly says, in speaking of the relation of gout to carcinoma in the aged: "I can affirm that, in nodular rheumatism, cancer and cancerous growths are not exceptional affections."

All the writers whom I have consulted speak of the involvement of the neighboring glands, but deny the visceral recurrence of the affection; and they all agree that it induces a cachexia, and destroys the patient by exhaustion before its local ravages have reached a vital spot.

Erichsen claims that such malignant disease of the jaw early manifests itself in swelling of the submaxillary glands, and that this complication sometimes occurs even before ulceration has taken place.

One writer affirms that ulceration is always a secondary process, but that, owing to the painlessness of the initial tumor or wart in epithelioma, the first stage frequently goes unrecognized.

The appended case illustrates many of the points here described, but differs in the essential features of absence of submaxillary swelling and acute pain, and in the very tardy appearance of cachexia.

My patient is a married woman of 87, from a remarkably long-lived family, one brother having recently died at 90. Her family is free from any constitutional taint, excepting gout, which has manifested itself in the patient under consideration by nodular swellings of the joints, a tendency to eczema, acidity of the stomach, and by the frequent appearance of the abnormal excretion of uric acid. Her children manifest the same tendency, and one of them is the subject of extreme nervousness and periodic attacks of hemicrania. A son, now past the prime of life, has been the subject of chorea from youth, and evinces a predisposition to attacks of eczema of a severe form, occurring in the neighborhood of a scar occasioned by a wound received in the late war.

In the spring of 1894 my attention was called to a cavity in the alveolar margin of the left upper maxilla, about the position occupied by the first molar tooth. This cavity had dark edges; it extended about a half-inch in depth, and had all the appearance of an unclosed tooth-socket. It was tender—hardly painful—and annoyed her principally by its tendency to make her seek to put the point of her tongue into it.

Not suspecting any malignancy, the cavity was disinfected and swabbed with a solution of silver nitrate (five grains to the ounce), and in a month's time it was filled, presenting a smooth, granulating surface, with everted edges. As there was no glandular involvement, and no change in color, the disorder was treated as a simple ulcer. For six months little or no change took place; then the granulating surface began to spread. A dentist was called in consultation, but he could make no diagnosis; he however suggested the local use of liquor sodii carbolatis. Spreading gradually continued, but no pain exhibited itself except upon the contact of hard food or broths containing salt. The patient's general health remained good; if anything, she was better than during the spring.

In the early summer of 1895, the disease had involved the mucous membrane on the outer alveolar margin and on the palatal plate, inward to the median line and forward to the second lateral incisor. Drs. Yorkes and Cryer, two specialists in diseases of the jaw, were then called and confirmed a suspicion of an epitheliomatous nature which I had begun to entertain.

In September of the present year growth was more rapid; the breath became very fetid, irregular nodules appeared, and points like stalactites hung from the alveolar buccal junction. A gangrenous slough, a half-inch in diameter, was thrown off from the center of the sore, which let out a discharge of pus and put an end to the fetid odor.

At the present writing, the ulcer has eaten deeply into the jaw, and appears to communicate with the antrum. By keeping it clear with hydrogen dioxide and potassium permanganate, all odor is suppressed. The patient takes two quarts of milk daily, consumes two eggs, and takes beef-peptonoids, with comparatively little discomfort; she retains all her faculties, shows no cachexia, and no tendency to glandular enlargement of the affected side, although

within the past week the gland at the angle of the jaw of the opposite side has been slightly swollen. At the present rate of extension there is grave reason to fear serious local involvement before the cachexia and exhaustion, which the authors describe as so essential a feature of the disease, shall have made its appearance.

The particular points of interest in this case are the association of so distinctly a gouty history with the occurrence of the affection; the strange absence of lancinating pain; the slight tendency to glandular enlargement; the delay in the appearance of cachexia; and the great similarity of the physical appearance and progress of the disease to the ulcerative or open form of epithelioma of the jaw, as described by Bond.

CLINICAL LECTURE.

FOUR CASES OF MIXED OR IRREGULAR FORMS OF MULTIPLE NEURITIS IN WHICH PARAPLEGIA WAS THE MOST PROMINENT SYMPTOM IN THREE, AND A CONDITION SIMULATING HEMIPLEGIA IN THE FOURTH.¹

BY J. T. ESKRIDGE, M.D.,

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LECTURE I.

I wish to call your attention to-day to a series of interesting and rather peculiar cases. Of the first one we have the following history:

CASE I.—John E., aged 27, born in Sweden, living in the United States since 1893 and in Colorado since 1894, was admitted into this hospital February 20, 1895. The family-history so far as he knows is negative. The patient's health in childhood was poor, but he can give us no definite account of his health during this time, further than that he was said to have lacked nerve-force, and he also remembers to have suffered from time to time from considerable pain in the chest. Some weeks before entering the hospital he had a chill, and was troubled with some shortness of breath and fever. On admission into the medical wards of the hospital he was found to be suffering from acute lobar pneumonia and was placed under the care of Dr. McLauthlin. In the early part of April, while he was slowly convalescing from his lung-trouble, he began to complain of pain in the legs below the knees and of a sore feeling in the legs above the knees, but no pain such as he experienced below the knees. The legs felt cold and he was annoyed by a prickling, numb sensation, and a constant, dull, heavy pain. About the 20th of April, or two weeks after he complained of these nervous symptoms, it was observed that he had double foot-drop, with marked wasting of the muscles of the legs below the knees. Tactile sense is said to have been but little impaired at that time except around the feet. The knee-jerks were noticed to be increased, but there was neither bladder-trouble nor bowel-

disturbance. Early in May he was transferred to the nervous wards.

The examination, May 4, 1895, showed extreme double foot-drop and inability to flex or extend either foot. The posterior tibial muscles were slightly contracted, so that the feet could not be forcibly dorsally flexed beyond a point at right angles with the tibia; the muscles that flex and extend the knees were fairly strong, and the hip-muscles were unimpaired; the bladder and bowels were unaffected, and there was no paresis or paralysis of any of the trunk or facial muscles. The dynamometer registered R., 116; L., 116. All the arm-muscles seemed to be in a normal condition. The knee-jerks were decidedly increased, and on depressing each patella a rhythmic contraction of the rectus femoris group of muscles took place. Ankle-clonus, plantar and tendo-Achillis reflexes were absent. The increased myotatic irritability was so great in the extensors of the knees that on placing the front of his feet against some resisting substance a continuous clonus-movement took place. The cremasteric and abdominal reflexes were present; all of the reflexes of the arms were normal. Tactile sense was apparently nearly normal except on the soles of the feet and on the dorsal surfaces of the toes, where it was not completely abolished, but was greatly lessened. The temperature-sense seemed to be unimpaired except over a small area over the upper and outer portion of each leg just below the knee. All other general sensory phenomena were normal. There was no involvement of the arms or hands, and no impairment of tactile sense around the anal region or over the external genitalia. The special senses showed no deviation from normal. The eye-grounds presented no pathologic appearance except that the left seemed a little hyperemic and showed evidence of slight old neuroretinitis. The patient has never been addicted to the use of alcohol to excess; neither has he been a moderate, steady drinker. Syphilis was denied. The wasting was extreme in the muscles of the feet and legs below the knees.

A large-sized Flemming battery was used in testing the reaction to the faradic current, and the muscles in a nearly normal condition usually responded slowly to an interrupted secondary current when tapped at button numbered 1.

Tibialis anticus: R., 4+2; L., no response to the strongest current.

Peroneus group: R., 4+3½; L., 4+5½.

Ext. long. digitorum: R., 4+6½; L., no response to the strongest current.

Posterior tibial group: R., 4+3½; L., 4+1.

Rectus femoris: R., 1; L., 1.

All the other thigh-muscles responded normally to this current.

To the galvanic current:

Tibialis anticus: R., K.Cl.C. = 10; A.Cl.C. = 8. L., K.Cl.C. = 20; A.Cl.C. = 15.

Peroneus group: R., K.Cl.C. = 12; A.Cl.C. = 15. L., K.Cl.C. = 15; A.Cl.C. = 20.

Ext. long. digitorum: R., K.Cl.C. = 10; A.Cl.C. = 8. L., K.Cl.C. = 20; A.Cl.C. = 15.

After the patient was transferred to the nervous wards he was kept in bed until a few weeks ago, when he was allowed to be up a portion of the day. The treatment consisted in covering the affected part with flannels, in placing sand-bags at the soles of the feet to prevent con-

¹ Two clinical lectures delivered at the Arapahoe County Hospital, September 14 and 21, 1895.

tractures of the flexor muscles of the ankles and feet; and strychnin, iron, and quinin were given internally. The affected parts have been masséed daily, and a continuous and interrupted galvanic current has been applied to the paralyzed muscles. I shall examine him to-day before you.

You notice that the right leg below the knee is much larger than the left and presents an edematous appearance. The right ankle-joint seems to be distended with fluid. The left leg below the knee presents a wasted appearance, with some edema in and around the ankle. The reaction of degeneration is said to exist when the muscles lose their normal irritability to the faradic current and respond to the positive pole of the galvanic current as readily, or even more readily, than they do to the negative. The man is now able to slowly flex and extend the feet, but the *tibialis anticus*, *extensor longus digitorum*, *extensor longus pollicis*, and *peroneus* muscles are extremely weak. The knee-jerk on the right is greatly exaggerated and increased by reinforcement; the left is even more exaggerated than the right and is also increased by reinforcement. No clonus is obtained by depressing the patella. Ankle-clonus and the plantar reflexes are absent; tendo-Achillis jerk is slightly increased. Usually in health very little response is elicited by tapping the stretched tendo-Achillis, but you notice that a sharp response is elicited by striking these tendons in this patient. All the superficial and deep reflexes above the knees are normal and there is no impairment of muscular power except in the parts below the knees. The posterior tibial group of muscles is fairly strong and the anterior tibial group brings the feet at right angles to the tibia, but with little force interposed the power is easily overcome. The left *tibialis anticus* is stronger than the right. Tactile sense on the right foot is normal except on the sole and on the end of the toes. On the left foot the area of tactile anesthesia is less than on the right, and involves the inner side of the sole of the foot, but on the outer side of the plantar surface the man is able to feel the touch of a camel-hair pencil in motion. There is a little anesthesia around the left ankle. The temperature-sense is not lost, but it is lessened. The feet and legs feel cool. All the affected muscles respond more readily to the faradic current than they did early in May of this year. To the galvanic current the muscles show a better response than at the former examination, but these still exhibit a change both in quality and quantity, so that we have a condition known as the reaction of degeneration in the muscles most affected.

Before considering the next case I wish to call your attention to certain conditions in this. You observe we have, first, motor paralysis; secondly, sensory disturbance; third, trophic changes; and, finally, changes in electric reaction. You also notice that the trouble is bilateral and limited to the legs, assuming a form of paralysis known as paraplegia. When paralysis affects an arm or leg upon one side it is known as hemiplegia; when either one leg or one arm on one side of the body it is known as monoplegia; when the arms and legs are affected on both sides of the body it is known as diplegia. You observe another condition in this patient: his paralysis is limited to the distal portions of the extremities, and, further, a multiplicity of nerves are involved. The sensory disturbance, like the motor, is only found at the distal portions of the extremities.

We shall consider the nature of this case after we have reviewed others.

CASE II.—William R., aged 28, single, a rancher by occupation, born in Ohio, living in Colorado 2 years, was admitted into the hospital July 31, 1895. The family-history is unimportant. The patient enjoyed good health until 2 years ago when pulmonary tuberculosis began to develop, and for this he sought the climate of Colorado. He was feeling well until about the middle of July, of the present year, when he contracted typhoid fever, for which he entered the hospital. About the 9th of August delirium developed and continued for 2 weeks. He had a slight hemorrhage from the bowels 2 days later. His temperature ranged rather high, from 102.5° to 105° F., until August 24th, when he had a severe chill, and the temperature descended to 95°. By the application of heat and the administration of stimulants the temperature soon rose to normal. There was no delirium after August 25th. The pulse-rate has been high, varying from 100 to 150 throughout the disease. About the middle of August the man began to complain of pain in the legs, which it was noticed were exceedingly sensitive. I was asked by Dr. Bothwell, who had charge of the patient, to see him September 3d.

Upon examination I found extreme wasting of the leg-muscles, more marked below than above the knees. The dorsal flexors of the feet were almost completely paralyzed; the plantar flexors were much stronger. Each *tibialis anticus* muscle was capable of slightly moving the foot, but the left peroneous group was completely paralyzed, and the right nearly so. All other muscles of the legs were fairly strong for one in the man's emaciated condition. As to the reflexes, the right knee-jerk was very slight; the left absent. The plantar reflexes were exaggerated, the tendo-Achillis absent, the cremasteric and abdominal reflexes present. The deep reflexes of the arms were exaggerated. Tactile sense was almost completely lost over the feet, greatly lessened around the ankles, and decidedly impaired up to a point midway between the ankles and the knees. Over the area of tactile anesthesia the man was unable to appreciate considerable differences in temperature. Sensory phenomena around the anal region and over the external genitalia were normal. Objectively all forms of sensation were normal in the hands and arms, but the patient complained of a numb sensation in the right hand and in the little finger of the left hand. There was foot-drop, but no wrist-drop. The toes were exceedingly sensitive to pressure, and the contact of the clothing was annoying. No attempt at examination of the muscles by electricity was made because of the weakened and irritable condition of the patient.

This patient also presented a form of partial paraplegia, motor and sensory disturbance being limited to the distal portions of the extremities, with involvement of a multiplicity of nerves. There were motor, sensory, reflex, trophic, and, undoubtedly, electric changes.

CASE III.—John T., a man 87 years old, born in Pennsylvania, but living in Colorado one year, was admitted into the hospital March 20, 1895. His family history, as far as I am able to learn, is negative. The patient in childhood and youth was healthy, except for an attack of rheumatism at his 15th year. He suffered from typhoid fever 50 years ago, but made a perfect

recovery. His health continued good until 4 years ago, when he injured his right hip by falling from a wagon. He says that he did not consider himself seriously injured at the time, but his hip has troubled him ever since, especially if he stands long on his feet, or gets very tired. During the summer of 1894 an eruption broke out on his face, the parts burned and itched all summer, and in September the symptoms were quite severe. In February, 1895, the eruption began to disappear, but the soles of the feet became so sore that the man could scarcely walk. He had, at this time, a prickling and tingling sensation in both feet and legs up to the knees, which in the right extended to the middle of the thigh. Sometimes his feet seemed to burn; at others they seemed to him to be as cold as ice. These sensations increased to such an extent that he was compelled to take to his bed early in March. On his admission to the hospital, 20 days after having been confined to his bed, he complained of pain in the legs from the hips downward, more marked on the posterior portion of the thighs than on the anterior. He experienced pain in the parts, especially when the legs were extended, and said it was worse in the right than in the left leg. Careful examination at that time, both by the rectum and over the nerves by palpation, revealed no spots of decided tenderness. His chief complaint was of a dull heavy pain in the feet, legs, and hips, and a tingling sensation below the knees. A most careful examination by means of a camel's-hair pencil discovered no loss of sensation, and motion appeared good. Subsequent to this the tingling sensation became a dull heavy feeling in the legs, and it was so distressing that he was compelled to lie in bed and have the affected parts wrapped in warm flannels. It was not until some time in July or August that any loss of sensation was discovered in the feet and legs. Atheroma of all the exposed arteries in the body has been most marked from the time of his admission into the hospital.

A re-examination, September 8, 1895, showed no perceptible loss of power in the feet or legs. The main complaint at present is that his legs below the knees feel numb like sticks, that he has a sensation as though he could not move them, but on attempting to do so he finds that he has the power. Pain radiates from the right hip down to the heel. The knee-jerks are absent, the plantar reflexes are decided, but the tendo-Achillis jerk is absent. The cremasteric and abdominal reflexes are present. Tactile sense is lost from a point midway between the knee and the ankle downward. All other forms of general sensation seem to be about normal. The muscles below the knees are slightly wasted. The right thigh is a little smaller than the left by actual measurement, in several places by about a quarter of an inch. The glands in the right groin are sensitive and more prominent than those in the left. There is no tenderness of the spine, but there is apparent partial ankylosis of the right hip-joint, with some enlargement of the entire joint. It is impossible to determine the exact condition of this joint without etherization, as the adductor muscles of the thigh are so tense.

You notice that this case, while differing in some respects from Cases I and II, has certain characteristic symptoms similar to those found in the first two cases. With the exception of the hip-joint trouble, which is the result of an injury received several years ago, and

which is apparently not related to the nerve-affection, the trouble is bilater, symmetric, and limited to the distal portions of the extremities. The sensory phenomena in this case are well pronounced, and the motor are slight.

CASE IV.—I would like to describe another most interesting case. I saw the patient a few days ago in consultation with the surgeon of the Denver and Rio Grande Railroad. The patient was a man about 35 years old, who had lived in Colorado for a number of years, and was employed in the D. & R. G. shops, principally in writing. He had always enjoyed excellent health until a few years ago, when he began to drink alcohol to excess. At first he took from two to three drinks daily. In the morning before breakfast he had his cocktail, and if he felt weak during the day he drank beer, and at night he took two or three "stiff drinks" of whisky to insure sleep. As time went on he found he had to increase his stimulants, as he thought, to keep himself up to his work. This habit of daily drinking continued for about 2 years. Two or three months ago, he found it quite difficult to use his right hand in writing, but did not notice anything wrong with the left. He did observe, however, that he did not walk as firmly as formerly, that he experienced a little difficulty in walking in the dark, and that occasionally numb and tingling sensations were felt in the hands and feet. A few weeks ago, on trying to alight from a car while it was in motion, he was thrown to the ground, falling on his right side, and bruising his right arm and leg. At the time the injury seemed to be slight, but soon after he observed that the right arm and leg were quite weak, and a few days later, on attempting to dress himself one morning, he found he was unable to stand. On examination I found the dorsal flexors of the foot below the knee almost completely paralyzed on the right side, and the flexors were weak. The muscles of the left leg below the knee were weaker than normal, but retained more than twice the strength of those of the right leg. There was partial foot-drop on the right side, but not on the left. The right arm below the elbow was almost completely paralyzed, so that there was partial wrist-drop. On the left side there was no wrist-drop, but the strength in the left arm was considerably impaired below the elbow. Tactile anesthesia was well marked on the bottom and dorsal surfaces of the right foot, and slight on the left foot. On the palmar surface of the left hand and on the dorsal surface of the fingers of this hand there was partial anesthesia. On the right hand tactile anesthesia was well marked, and extended a little above the wrist. The external genitalia and the anal region were uninvolved. Plantar-reflexes, tendo-Achillis jerks, and knee-jerks were absent. All the other superficial reflexes were present, but the deep reflexes of the arms were increased. None of the special senses was affected, and the face and tongue were apparently in a normal condition.

This case is also similar in its prominent symptoms to the first three; the paralysis and tactile anesthesia, while most marked on the right side are bilateral, and the trouble is limited to the distal portions of the extremities. We may account for the symptoms being more pronounced on the right side than on the left by the injury which the man received to the right leg and arm some weeks previously, and it is probable that the right hand,

even before the injury, was affected out of proportion to the left, from the fact that he had to use it in writing, and the delicate movements tired the muscles, and, further, the constant use of this hand directed his attention to it more than to the other. However, to the effect of injury to certain nerves supplying groups of muscles in this class of cases, and the apparent unilateral character of the symptoms, I shall refer later in connection with the nature of these affections.

Now let us see if by the process of diagnosis by exclusion we cannot arrive at the probable nature of the trouble from which these four patients are suffering. Pain in the limbs, especially in the muscles and along the nerves, is often mistaken for rheumatism. Rheumatic pains in persons subject to rheumatism may precede or follow serious illnesses. They may be lighted up by injury and are unpleasantly influenced by the use of alcohol, but rheumatism, in the vast majority of cases, when it attacks the extremities, involves the joints, and it is exceedingly rare for the distal portions of the extremities alone to suffer. Rheumatism is not attended with areas of anesthesia, and when muscular weakness and wasting are present, which may occur from the involvement of the joints, there is no reaction of degeneration in the muscles, such as these cases present. The reflexes are not affected in rheumatism, except that at times the deep reflexes are increased. I have seen one case of rheumatism of the legs in which there was complete paralysis of the flexors and extensors of the ankles, but these symptoms were temporary in character, and proved to be due to the inhibitory character of the pain in the legs. Wasting of the muscles, if it occur in rheumatism, is a late symptom, and is always associated with affection of the joints. None of these cases would be mistaken for rheumatism after a careful study of them. Pressure-neuritis may give rise to symptoms somewhat similar to those presented by the cases which we have studied, but in this condition the paralysis is rarely bilateral unless it occurs from pressure in the pelvis or from disease of the vertebrae. When the distal portions of the extremities only are affected and the trouble is bilateral, it will, in the vast majority of instances, be due to other conditions than pressure on the nerves. If pressure should be the cause, the source of the irritation of the nerves in the legs is very easily detected. When the pressure occurs in the pelvis, the symptoms extend up to the seat of the pressure, and if the arms are involved the trunk-muscles will also be affected. There seems then to be no difficulty in excluding pressure-neuritis as the cause of the trouble in these cases. Spinal pachymeningitis may give rise to pain in the legs, shooting or dull, and sometimes the pain is limited to the course of the nerves, but here also the symptoms extend up as high as the seat of the pressure, so that the trouble is never limited to the distal portions of the extremities. In acute ascending paralysis in which the affection begins in the feet and gradually travels up the legs and involves the muscles of the trunk and arms, there is little danger of mistaking it for an affection in which the trouble is limited entirely to the distal portions of the extremities, besides in acute ascending paralysis the disease runs a rapid course, there is but little anesthesia, if any, and atrophic changes have not time to become manifest in the muscles. Locomotor ataxia, on account of the pain and the ataxic symptoms, may simulate con-

ditions of the kind presented by the cases we are studying, but there is no paralysis until late in the disease; the bladder-symptoms and eye-symptoms are usually pronounced, and there is no marked muscular wasting and true reaction of degeneration. Myelitis may give rise to paralysis that is most pronounced in the distal portions of the extremities, attended with foot-drop and areas of anesthesia around the feet and ankles; but in myelitis, if the symptoms are largely limited to the feet and ankles, the lower portion of the cord is affected, and there will be areas of anesthesia over the external genitalia and around the anal region; besides bladder-symptoms and bowel-trouble would invariably be present. In diphtheric paralysis there is usually a history, though frequently imperfect, of sore throat, but the paralysis always first manifests itself in the palate and muscles of the iris, so that there will be a difficulty in swallowing liquids and a tendency to constant dilation of the pupils. Hysteria is not to be disregarded in any class of cases of nervous disorder, but in this affection, except in cases of many years' duration, there is no marked wasting of the muscles and no electric changes. Further, no anesthetic areas limited to the distal portion of the extremities would be present. In this brief review it seems to me that we are able to exclude everything that would likely give rise to the symptoms that these cases present, except multiple neuritis, but, as my hour has expired, we shall take up and study the nature of multiple neuritis and the individual symptoms presented by these cases at our next clinic, one week from to-day.

(To be continued.)

CLINICAL MEMORANDA.

NOTES OF A GASTROSTOMY.

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THE patient whose case I report was a stationer by occupation, and claimed to have been in good health up to about one year ago, when he observed that it was very difficult, and soon became impossible, for him to swallow food. He had subsisted on liquids, which he swallowed with difficulty till one week before operation; and during that week he was sure nothing went into his stomach. Milk and other liquids swallowed in small quantities were promptly returned, mixed with pus and frothy mucus. His bowels had not been moved in weeks, and his urine was scanty and high-colored. Numerous attempts had been made at various times, and by a number of surgeons, to pass a bougie into and through the constriction, and it was thought this had been done; but it seems likely, in the light of subsequent events, that it could hardly have been accomplished.

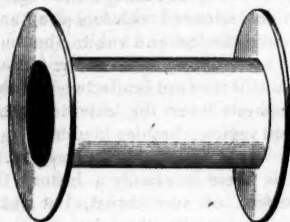
Two strictures were supposed to exist—one about nine inches from the incisor teeth, and one at the point of emergence of the esophagus from the diaphragm or just at the point of junction with the stomach.

When I first saw the man (March 14th) his emaciation and weakness were extreme. He was reduced from 135 pounds in weight to about 85 pounds; his tongue was dry and brown, his breath foul. He coughed a

great deal, and complained much of pain in the right side of the chest.

I passed a feeding-tube (No. 16 American catheter-scale), which met an obstruction nine inches from the

FIG. 1.



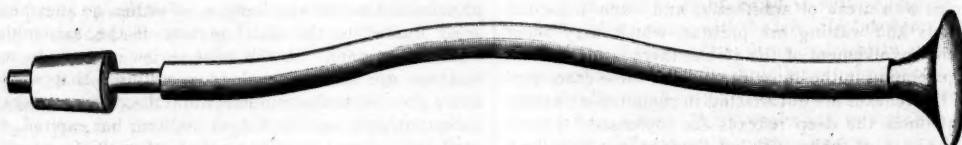
incisor teeth; this stricture was easily passed, and without the use of force. The tube was again arrested at

the operation the stomach was opened, and a glass tube (one-and-one-half inches long) with a flange on each end was carefully introduced.

The dressings were split, carefully placed about the tube, and covered with a piece of rubber to keep them dry. The stomach was then washed out with a little warm water, and a small quantity of milk was introduced and retained by a cork in the external end of the tube.

It soon became evident that the long, unused, and collapsed stomach would not dilate to receive a sufficient quantity of food unless some slight force was used to expand it; so a cork was perforated and a glass tube passed through it, to which was attached a rubber tube with a small funnel at the other end. The first cork was now removed from the tube in the stomach, the perforated cork introduced, and the apparatus brought into use. The force of gravity secured by raising the funnel eighteen or twenty inches was sufficient for the

FIG. 2.



Perforated-cork apparatus.

fifteen inches, but did not convey the impression of being in the stomach, and a small quantity of milk passed into it soon filled the tube and the space about it, and ceased to flow. On withdrawing the tube the milk was regurgitated. A second attempt was made with a like result, and it was concluded that there was a permeable stricture at nine inches and an impassable one near the stomach.

The family-history of this patient was good, no member of his father's family or that of his mother's having had carcinoma or any strumous disease. He had never had any manifestations of syphilis, though exposed to the disease in early life, and he had a number of strong vigorous, and apparently healthy children. No tumor could be made out, and the cause of the obstruction could only be surmised. For the relief of the urgent need of nutrition, and to prevent starvation, an immediate gastrostomy was advised and accepted. The patient was removed to St. Francis' Hospital and was operated upon the following day, March 15th, after due preparation, rectal feeding being resorted to in the meantime.

The thin abdominal wall was quickly traversed by an incision three inches long, the left border of the liver presenting at the upper end of the wound. The small and collapsed stomach was found lying against the vertebræ; it was caught, drawn up into the wound, and when a portion had been selected which was comparatively free from bloodvessels, was stitched by a double row of sutures to the parietal peritoneum and muscles. A dressing was quickly applied and the patient put to bed.

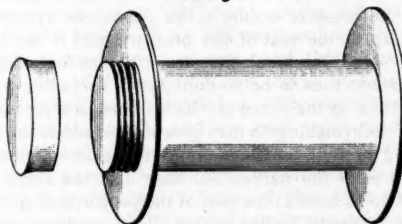
His recovery from the ether was prompt, and his condition under the circumstances very good. Rectal feeding was maintained, and on the second day after

easy introduction of half a pint of hot milk-punch at a time. By quickly changing the corks again, the food introduced was retained, the pressure from within acting against the inside flange and preventing any leakage by the sides of the tube.

There was nothing for use in such a case to be found in the instrument-makers' catalogues or in the instrument-stores to which I had access; so I had a tube made of hard rubber with a screw-cap, for permanent wear, as it seemed safer than a glass one, *i. e.*, not so liable to be broken.

This was introduced, but it was not so satisfactory as was hoped, because the screw-cap could not be easily and

FIG. 3.



quickly put on, and there was much loss of stomach-contents and soiling of dressings. The screw-cap when in place was flatter and less in the way than the cork.

The patient gained in strength and spirits at once after substantial food was taken. His bowels began to move regularly, and his urine was much increased in quantity.

It became evident that there was a spasmodic element

about the constriction of the esophagus that had been relieved by rest, as the man could now swallow small portions of beer or water; yet milk given through the tube regurgitated by the mouth at times. Strong hopes were entertained that the stricture could be passed from below and distended by the Cutter rosary bougie and the string-saw when he had gained sufficient strength to warrant the attempt.

These hopes were delusive, as his improvement was temporary. In two weeks his failing strength and energy were nearly exhausted, and on April 4th (twenty-one days after the operation) he died, notwithstanding the fact that he had taken fair quantities of food which had seemed to be easily digested and assimilated. The reason for this became apparent at the autopsy.

The body was found to be very much emaciated. The stomach was firmly adherent to the abdominal wall, there having been no peritonitis. The liver was enlarged and displaced downward and to the right. The gall-bladder was distended, and its fundus was within an inch of the symphysis pubis. The right border of the liver reached well below the crest of the ilium. The other abdominal organs seemed normal.

On opening the chest a great deal of inflammatory thickening was found about the lower end of the esophagus. The right lung was adherent, and the right pleural cavity contained about a pint of thick, bloody, and offensive pus. The lower lobe of the right lung was infiltrated with pus, and was the seat of croupous inflammation. It was hepatized and thoroughly consolidated. The apex of each lung contained cicatrices of old tuberculous lesions. On the right side there had been considerable destruction of tissue (cavity). A stricture of the esophagus was found one inch below the bifurcation of the trachea, with an ulcerated opening or false passage leading into the right pleural cavity.

About this were sinuses containing pus. The stricture involved only about one-and-one-quarter inches of the esophagus, and was the result of an ulcer, probably of specific origin. It was very evident that the condition of things in the right lung and pleura was due to the communication with the esophagus. The cause of death was pneumonia, sepsis, and asthenia.

The study of this case in the retrospect develops many interesting points, and reinforces the good old teaching as to the exercise of great care in the use of the esophageal bougie; for there can be little doubt that the false passage into the pleural cavity was made by the passage of a bougie. Subsequent inquiry of the family fixed the time when this accident very probably had taken place. In August, 1894, a bougie of large size was passed with difficulty. The operation was painful at the time, and was followed by a free flow of blood, by pain in the right side, with chills, fever, and confinement to bed; cough and expectoration supervened and remained till death.

Esophageal bougies have been thrust into abscesses, aneurysms, the pericardial and pleural cavities, as well as into the mediastinal spaces; so that the utmost gentleness must be exercised in their use.

That this condition in the chest was not diagnosed before death was due to the fact that I had seen the patient only the day before the operation, and then the

imminent starvation was the matter of greatest importance, demanding immediate attention, and his condition was such that no thorough physical examination could be made.

The dreadful condition of the lower lobe of the right lung and the pleural cavity, the former being riddled with pus-pockets and the latter full of pus and of portions of food which had been swallowed or introduced by the tube, made it a marvel that the man had survived so long a time. Beside this, little food could have gone into his stomach, as the stricture was so tight as to be almost impenetrable.

The question whether milk and other food which had been introduced into the pleural cavity might have been partially absorbed, and so prolonged life, was considered; but it seems hardly probable that any considerable quantity could be thus taken up by tissues so inflamed and disorganized.

Could this gastrostomy have been done before the esophagus was perforated, there can be but little doubt that the patient's life could have been saved, the stricture being passed from below and subsequently dilated, after which the closure of the new mouth into the stomach would have been an easy and natural sequel.

TACHYCARDIA ASSOCIATED WITH FUNCTIONAL AND ORGANIC MURMURS AND DISTURBED NERVOUS MECHANISM.

BY THOMAS LUTHER COLÈY, A.B., M.D.,
OF PHILADELPHIA.

WILLIAM MCC., aged 19, white, a clerk by occupation, first came under observation on July 16th. Two days before (on the 14th, which was a very warm day), he had been playing baseball and was seized with a violent attack of palpitation, accompanied by great dyspnea. Both of his parents are well; one grandparent is alive at 85; the others all died after 70. The patient has one brother who is a hale, hearty boy of 16. One brother died of diphtheria at 2 years, another of hydrocephalus at 3 months. William has always been a weak, sickly child whom his parents had despaired of raising. He has had measles, chicken-pox, whooping-cough, and pneumonia of a severe type some 8 winters ago. He is of an extremely nervous temperament. For 5 years he has had attacks of palpitation of varying severity brought about by the slightest nervous shock, even at times by straining at stool. None of these attacks has been of long duration, and most usually but momentary. One, however, was very severe in December, 1892. At that time the attack lasted uninterruptedly for 4 weeks, but was lighter than the present one. The pulse when first counted was 195. A few moments afterward it had fallen to 165. He said that the slightest noise in the street or in the house, the slightest commotion, the visits of expected friends, even the opening of his door, all tended to aggravate the symptoms.

The patient was very thin and extremely emaciated. The mucous membranes were pale, the conjunctivæ pearly, and the skin ashen. A blood-count made at this time showed 55 per cent. of hemoglobin and two-and-one-half million red corpuscles. The chest was very much malformed and markedly rachitic, the costal

angles being considerably increased. The left side was much more prominent than the right; the apex-beat was greatly displaced downward and to the left. It was very diffuse and centered at the seventh rib in the mid-clavicular line. There was much epigastric and precordial pulsation and visible pulsation in the jugulars. The chest, while emaciated and somewhat flattened on the right side, was of good depth, antero-posteriorly, and the movements of respiration were well marked. There was no edema under the eyes or in the hands and feet, nor had any existed to the patient's knowledge. The tumultuous pulsation was transmitted strongly to the palpating hand and moved it forcibly. The lungs were normal, with slightly increased expiration. On auscultation the rhythm of the heart was found to be greatly disturbed; but so great was the rapidity of its action that no functional or organic murmurs could at this time be detected. An ascribed cause of this condition, that of abortive systole, conveys the idea of the sound of this terrific overaction.

The patient was placed at absolute rest in a darkened room and upon milk-diet and stimulants. Calomel was prescribed in divided doses to keep the stools soluble. The bromids were ordered in 20-gr. doses t.d., and increased to 30 gr. An ice-bag was also applied to the chest. Strychnin was given in doses of $\frac{1}{30}$ gr. every 4 hours. Digitalis was also tried in 15-drop doses of the tincture; but the result of this treatment was unsatisfactory. The bromids were discontinued at the first signs of disturbing the stomach. Fowler's solution was next prescribed in ascending doses and morphin given, $\frac{1}{4}$ gr., every 3 hours. The morphin, which was also tried in $\frac{1}{4}$ -gr. doses hypodermically, gave the patient considerable comfort, but the pulse did not fall below 165. The boy continued to grow weaker, his appetite failed entirely, and symptoms of jaundice appeared, which was unfavorably regarded as due to passive portal congestion, but this was happily relieved by calomel. For 6 weeks the patient continued in this condition, with the heart pulsating from 195 to 165 per minute, but not going lower.

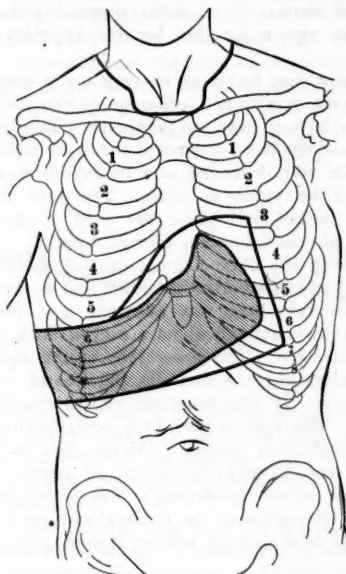
Finally tincture of cannabis indica in 5-minim doses, with tincture of aconite in 2-minim doses, was tried with success. After a very few doses had been taken great improvement was noted, and soon the pulse fell to 60. Earlier in the case a slight degree of pyrexia (100°) had been observed, and a simple mixture with drop-doses of tincture of aconite had relieved it, but this did not affect the heart's action; the action of the cannabis indica, combined with aconite, proved, however, very satisfactory.

Auscultation performed after this remarkable drop in the heart's rapidity led to the astonishing fact that, while no murmurs could be detected at any time during the attack, now they were plainly audible. This is another case of the sort reported by Brunton,¹ in which a basic murmur, well heard when the heart was beating quietly, disappeared when its action became very much greater.

There was present in the case under consideration a very pronounced mitral systolic murmur, well transmitted to the inferior angle of the scapula. The aortic second sound was markedly accentuated. There was a

soft, blowing, systolic, pulmonary murmur, with a snapping, ringing second sound. Both sounds at the ensiform were valvular and forcible. The heart was very irregular in its action; both sounds were plainly heard in the carotids. In the veins at the root of the neck, most distinct upon the right side, hemic murmurs were heard, accompanied by a continuous thrill and a venous hum.

The percussion-outlines, as shown in the accompanying illustration, indicate great hypertrophy and dilatation of both ventricles, the marked deformity of the left side referred to supporting the evidence of percussion.



Showing superficial and deep cardiac and hepatic percussion-dulness.

The causes that tend to produce palpitation may be enumerated as follows: (1) Anemia; (2) pyrexia; (3) exophthalmic goiter; (4) organic heart-disease; (5) pure neuroses; (6) reflex influences, such as gastric disturbances, tapeworm, etc.; (7) shock; (8) rheumatoid arthritis; (9) the use of tea, coffee, tobacco, etc.; (10) central nervous disease, causing pressure on the pneumogastriacs, such as basal tumors, etc.; (11) nephritis, especially late in the cirrhotic form (Brunton). Of these there were eliminated in this case the pyrexia, of which but a very slight degree was present, and that not continuously, the shock, rheumatoid arthritis, reflex influences, pressure upon the pneumogastriacs, the effects of tobacco, tea, and coffee, none of which had been used. The patient's youth and careful examination of the urine, which proved normal, leaves nephritis out of the question. The thyroid was not enlarged, no exophthalmos was present, nor von Graefe's or Stelwag's signs.

We have left then to discuss anemia, pure neuroses, and organic heart-disease. Of these the anemia accounts so readily for the symptoms and for the cardiac neurosis that it seems best to regard it as the cause of

¹ Lancet, November 27, 1875.

the conditions associated undoubtedly with the neurotic tendency.

The blood in anemic conditions is usually regarded as deficient, both in quantity and quality, and the hemoglobin of the red blood-corpuscles is decreased; also the albuminoid constituents of the blood-plasma.

"This impoverishment," says Fowler (*On the Origin of Anemic Murmurs*) "is felt in every tissue and organ of the body, and the sum-total of the phenomena thus evoked constitutes the anemic condition."

It is hardly possible to believe that the weakened, dilated heart of anemic conditions is not also accompanied by the grave structural change of fatty degeneration of the heart's muscle. The degree of hypertrophy found associated with the dilatation of anemia and due to overaction must necessarily be limited, for the weakened heart-structure cannot produce very great hypertrophy.

The destructive changes in the nervous mechanism of the heart follow upon these other changes, notably in the quantity and quality of the blood, and there are produced the nervous effects of tachycardia and such associated symptoms of the purely neurotic type of palpitation.

It is not always a simple matter to differentiate between a functional and an organic cardiac murmur. No excessive dilatation of the organ could long exist without producing valvular deficiencies. In this case the soft, systolic, pulmonary murmur seems to be typical of the condition of grave anemia. The accentuated aortic second sound indicates the dilatation and hypertrophy of the left ventricle.

The systolic mitral murmur is clearly heard at the inferior angle of the scapula, in which position a purely functional murmur is not (?) heard. The right heart, while evidently greatly dilated, fortunately, does not reveal the evidences of tricuspid regurgitation.

To summarize, the patient suffers from palpitation of the heart from functional, organic, and nervous causes. The anemia, however, seems clearly responsible for the severity of the condition.

The patient continues to take strychnin and Fowler's solution, and has greatly improved. He has been able to resume work, and his appetite and digestion are good. The disturbed cardiac mechanism still causes him the occasional return of spells of palpitation, but these have not been of a severe character.

The prognosis in such a case cannot be very favorable, but it is gratifying to note the increase of red blood-corpuscles to 3,100,000 and of hemoglobin to 60 per cent. at the last blood-count (October 4th), and that the patient has gained 9 pounds in weight.

MEDICAL PROGRESS.

Congenital Absence of the Rectum.—WOODHOUSE (*Lancet*, No. 3760, p. 733) relates the case of a thin, weakly woman, thirty years old, with a tuberculous family history, who came under observation three days after the birth of her first child—a male. The infant had been constantly sick since six hours after birth, when the mother first nursed him, and although abundant urine had been passed, the bowels had not acted. The child was thin and puny, cried repeatedly, and was

evidently in great pain. The abdomen was much distended and tympanitic. The anus was absent, nor was there any evidence of its presence in the normal situation, beyond a slight depression close to the median raphe. There was no impulse or bulging in the perineum when the child cried. It was decided to at once make an attempt to relieve the child and establish patency of the rectum, which it was thought would probably be within a short distance of the surface. The little patient was anesthetized with chloroform and an incision an inch long made in the middle line in the normal situation of the anus, cutting upward and backward, and keeping close to the sacrum. From time to time the little finger was introduced into the wound, but nothing indicative of gut could be felt, even at the depth of $1\frac{3}{4}$ inches. Inguinal colotomy was abandoned on account of the exhausted condition of the patient, and the wound was dressed with boric powder and salicylated wool. Death took place five hours after the operation. On post-mortem examination the intestines were found greatly distended, but otherwise normal, until a point was reached close to the brim of the pelvis in the left iliac fossa, where the sigmoid flexure abruptly terminated in a cul-de-sac. The peritoneum was intact and showed no signs of inflammation. All the other pelvic organs were normal. The pelvis itself was smaller than usual and the tuberosities of the ischia much closer together.

A Diagnostic Sign of Aneurysm of the Heart.—EMBLEY (*Australian Medical Journal*, vol. xvii, No. 8, p. 361) has reported the case of a well-nourished man, sixty years old, a watchmaker, of sedentary though temperate habits, who presented loss of power in the right upper extremity. The apex-beat of the heart was in the nipple-line, while the area of cardiac percussion-dulness extended considerably to the left. The heart-sounds were with difficulty audible in consequence of their low pitch and of the thickness of the chest-walls, but especially because of the presence of a musical sound quite distinct from the normal sounds. This sound was high-pitched, humming, continuous throughout the entire cardiac cycle, rising in systole and falling in diastole, audible from apex to base, but loudest at the apex. There was complaint of pain and numbness in the left arm, with pain and hyperesthesia in the cardiac region. Later there was dyspnea on exertion, pain and numbness in both arms, flatulence, anorexia, sleeplessness, and more marked precordial pain and hyperesthesia. The abnormal humming persisted. Death took place suddenly. Upon post-mortem examination the pericardium was found distended with thirteen ounces of blood-clot, and in the posterior wall of the left ventricle was a small, ragged opening from an aneurysmal dilatation. The heart was covered by a thick deposit of fat; its muscular substance was soft and affected by fatty degeneration; the left ventricle was hypertrophied. The valves appeared competent. The vessels were atheromatous.

The Bacteriologic Diagnosis of Diphtheria.—When ordinary facilities for bacteriologic investigation are not available in the diagnosis of diphtheria, WRIGHT and SEMPLE (*British Medical Journal*, No. 1815, p. 907) recommend for the preparation of a satisfactory culture-medium the use of a small quantity—say half a tea-

spoonful—of antitoxic serum, or, if this be not at hand, white of egg, which is introduced into a small, wide-mouthed bottle. The latter is placed in a horizontal position and its contents coagulated over steam. Any water of condensation is poured off, and the culture-medium is permitted to cool. The inoculation is made by passing lightly over the surface of the medium a stout wire or glass rod which has been brought in contact with the diphtheric throat. The stopper is to be replaced and the bottle is to be kept as nearly as possible at blood-temperature. If this is not attainable the temperature of an inside pocket will generally suffice. The microscopic examination may be undertaken after twenty-four hours have elapsed. The material for examination is obtained by lightly scraping the surface of the culture-medium with a platinum wire.

Successful Removal of a Brain-tumor.—In the Section for Surgery of the recent Congress of German Naturalists and Physicians, ROTH (*Deutsche medicin. Wochenschr.*, 1895, No. 40, Suppl. No. 25, p. 168) reported the case of a man, 60 years old, who had presented a typical clinical picture of focal epilepsy. On trephining the skull a soft tumor was found in the cortex, invading the fissures and in places adherent to the pia mater. The growth was removed principally by blunt dissection. Careful examination proved the formation to be a parithelioma arising from the parithelium of the vessels. Immediately after the operation the arm of the affected right side was totally paralyzed; the right leg and the lower portion of the right side of the face were markedly paretic; paraphasia was considerable. In a short time, however, progressive improvement set in. The paresis of the face and leg disappeared, then gradually the paraphasia. Bodily and mental strength increased. The attacks of headache formerly present were not repeated, and the convulsions remained in abeyance. The paresis of the right arm disappeared very slowly.

Poisoning by Stale Eggs.—CAMERON (*Dublin Medical Journal*, October, 1895, p. 311) has reported the occurrence of vomiting and purging in 74 nuns and girl-pupils in the boarding-school attached to a convent in Limerick, following a dinner at which mutton and a custard composed of eggs, milk, corn-flour, and sugar were eaten. The corn-flour was suspected to contain arsenic, but analysis showed it to be free from poison of any kind, and to be of good quality. The sugar also proved to be pure. No other constituents of the meal could be obtained. The vomit and the stools were intensely green from the presence of biliary matter, but careful analysis failed to disclose the presence of ordinary poison. The viscera of two patients that had succumbed also were examined, but no poison was found. Ptomaines were found present, but in small quantity. The milk used had been boiled, and the meat was above suspicion. The eggs, however, were not fresh, and one presented a reddish-brown color, and was thought to be bad. Some of the custard, given to pigs, induced severe diarrhea. Reference is made to an earlier case of poisoning by stale eggs.

A Culture-medium for Diphtheria-bacilli.—TOCHTERMANN (*Centralblatt für innere Medicin*, 1895, No. 40, p. 961)

recommends the following formula for the preparation of a culture-medium for diphtheria-bacilli, having several practical advantages over the media in current employ: To a 2 per cent. watery solution of agar-agar are added 1 per cent. of peptone, $\frac{1}{2}$ per cent. of sodium chlorid, and from 0.3 to 0.5 per cent. of glucose, and the whole is filtered, then boiled for from one-quarter to one-half hour with calves' blood-serum in equal parts or three parts of serum to two of agar-agar-solution. The filtrate is received in a flask and sterilized by exposure to the vapor of steam for from an hour to an hour-and-a-half on three successive days. No precautions need be taken to insure sterility of the blood, which is permitted to stand for twenty-four hours and the supernatant serum then poured off. The presence of a small number of red blood-corpuscles in the serum is of no moment, as the filtrate is clear after boiling. The inoculation may be made upon the surface of the hardened medium.

Polyesthesia and Macroesthesia.—STCHERBAK and IVANOFF (*Archives de Méd. Experim. et d'Anat. Path.*, 1895, No. 5, p. 657) have reported a case of polyneuritis and hysteria presenting curious sensory manifestations in the distribution of the right median nerve. A body touched or held with the thumb and the adjoining two fingers felt larger than it was actually (macroesthesia), and at the same time it seemed as if several bodies of the same kind were felt (polyesthesia). At different times varying sizes and numbers were appreciated. The phenomena could not be elicited elsewhere than in the region named. Its advent had been preceded by severe pains, paresthesia, and trophic changes, particularly in the distribution of the right median nerve. The paresthesia continued in association with the polyesthesia and macroesthesia, and disappeared with them. There was also impairment of both tactile and muscular sensibility in the affected area.

THERAPEUTIC NOTES.

The Diuretic Action of the Salts of Lithium.—As the result of an experimental investigation, which was confirmed by clinical observation, MENDELSON (*Deutsche medicin. Wochenschr.*, 1895, No. 41, p. 673) has found that while all of the salts of lithium possess diuretic properties the most active in this direction is the citrate, which possesses the additional advantages of solubility and comparative freedom from unpleasantness of taste. Next in activity is the acetate. It is further pointed out that chemic solvents of uric acid are not necessarily useful agents in the treatment of gout or the uric-acid diathesis.

For Hematuria.—

R.—Ext. physostigmatis alcohol . . . gr. $\frac{1}{2}$.
 Quininæ sulphatis . . . gr. $\frac{1}{2}$.
 Ergotinæ . . . gr. jss.—M.

Ft. pil. no. i.

S.—To be repeated five times a day.

GIOVANNI, *Semaine Médicale*.

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THE PATHOLOGY AND THE TREATMENT OF GOUT.

WHILE the clinical picture of gout in its varied manifestations has been clearly made out and its treatment has been placed upon a fairly secure basis, a good deal of doubt and uncertainty surround its intimate pathology, and this the near future promises soon to dispel. In an interesting address delivered recently before the Berlin Society for Internal Medicine, KLEMPERER (*Deutsche medizinische Wochenschrift*, 1895, No. 40, p. 653) reviewed the main phases through which this subject has passed, and presented evidence showing that none of the views hitherto propounded is entirely adequate or satisfactory. In addition he recited the results of some original investigations which, while not solving the problem, bring it closer to a solution and shed new light on an obscure subject.

GARROD maintained that gout is due to increased formation and diminished elimination of uric acid; when an excess has accumulated in the blood it is deposited in the tissues, in which it gives rise to inflammation and necrosis. Recent investigations have, however, thrown doubt upon the accuracy of the results of Garrod's analyses. Nevertheless EBSTEIN admits the probability of an excessive pro-

duction of uric acid, with accumulation in the blood; the circulating fluid, thus surcharged, causes local inflammation followed by necrosis, and in the necrotic tissues uric acid is deposited. v. NOORDEN has arrived at the conclusion that the gouty condition is independent of the presence of uric acid in the blood; the tissue-necrosis that occurs he ascribes to the activity of a hypothetical ferment, and he believes that the uric acid deposited locally is formed at the necrotic focus.

To determine the relation between the presence of uric acid in the blood and tissue-necrosis, KLEMPERER made a study of a number of individuals, including three persons in health, a case of leukemia, one of pneumonia, two of interstitial nephritis (one compensated and one uremic), and four of gout (three during a paroxysm and one uremic). In all of the cases of gout, as well as in the case of leukemia, and in both cases of nephritis, comparatively large quantities of uric acid were found in the blood. To ascertain whether this result is due to increased production or to diminished elimination the urine was studied in eight cases of gout, placed under like conditions. In two the daily amount of uric acid found in the urine was between 0.4 and 0.5 gram; in five between 0.5 and 1 gram; and in one between 1 and 1.2 grams. No relation existed between the amount of uric acid present in the urine and the character of the disease.

It has been shown that the ingestion of thymus gland of the calf by healthy persons is followed by increased excretion of uric acid, and a similar increase was also found to take place in gouty persons. From all the facts it appears that there is no retention of uric acid in gout as long as the function of the kidneys is not materially interfered with and that the presence of considerable amounts of this substance in the blood cannot be attributed to diminished elimination, but must be ascribed to increased production. The presence of similar amounts of uric acid in the blood of others than gouty patients, however, shows that this factor does not constitute the essential element in the causation of the gouty condition.

KLEMPERER has found further that slight and insignificant differences exist in the solubility of uric acid in the blood-serum of gouty patients as compared with that of other patients and also of healthy persons, the solvent power of the serum in all being considerable—in fact, more than sufficient to dispose of the large amounts of uric acid present. He

is, therefore, forced to the conclusion that the deposit of uric acid in the necrotic areas of gouty persons is not due to its insolubility in the blood, but is to be explained by the fact that such tissues possess a greater chemic affinity for uric acid than does the blood. Experimental observations showed also that while the blood underwent some diminution of alkalinity during the gouty paroxysm, this was not more than occurs under other conditions, and certainly not sufficient to account for the crystallizing out of uric acid.

In view of all the evidence, the conclusion is reached that in the gouty certain unknown substances lead to inflammatory and necrotic processes in various tissues, and the necrotic tissues possess the property of attracting from the blood uric acid when present in considerable amount. These substances frequently develop from hereditary influences; sedentary pursuits and high living favor their formation; and two poisons in particular—alcohol and lead—predispose to their activity. It has hitherto been supposed that intoxication with lead paves the way for the development of gout by lessening the excretion of uric acid, but it has been shown that lead-poisoning does not have this effect; it may be that the lead present in the blood enhances the necrotic effect of the gouty poison.

The practical deduction from what has gone before is that successful treatment must depend not upon increased solvent power of the blood upon uric acid, but upon the correction and the prevention of the necrotic process by increased oxidation and increased elimination. The attainment of these ends is largely reached through the employment of established measures whose use is sanctioned by the empiricism of centuries. These include increased physical activity, warm or hot baths, free ingestion of milk and of water, preferably alkaline, the avoidance of meat in excess, particularly red meat, and of fats, alcohol, and other carbohydrates. Finally, thymus gland may be administered to increase elimination of uric acid.

KEATS, THE APOTHECARY-POET.

INTO the Academy of the Immortals, that small and select body, few members of the profession of medicine have ever been admitted. In English literature we have furnished two or three to the charmed circle that surrounds Shakespeare; but, by common consent, one sits close beside the Master, the young apothecary, Keats, the centen-

ary of whose birth all lovers of poetry have celebrated this week. Born in 1795, at the sign of the "Swan & Hoop," Moorgate Pavement, London, son of the head 'ostler, the circumstances of his birth and of his early years were by no means favorable to the cultivation of the Muses. Fortunately, at school, the influence of Charles Cowden Clarke turned the thoughts of the pugnacious lad from boxing to poetry, and before he had reached his fifteenth year Keats was an ardent student of the Elizabethans, and his fate was sealed. In 1810 he was apprenticed to Mr. Hammond, a surgeon at Edmonton. In the lithographed copies of the indentures of that date the number of specific negatives indicate the character of the apprentice to whom cards and dice, taverns and playhouses, fornication and matrimony, are equally interdicted. We know but little of the days of Keats' apprenticeship. A brother-student has left on record that "he was an idle, loafing fellow, always writing poetry." In 1814 pupil and master quarrelled, and, by mutual consent, the contract was broken. It would appear from the following sentence in one of Keats' letters that not words alone passed between them: "I dare say you have altered also—our bodies every seven years are completely fresh materiel'd. Seven years ago it was not this hand that directed itself against Hammond." Keats attended the United Hospitals of St. Thomas' and Guy's for two years, 1814–1816, and in the latter became dresser to Mr. Lucas. On July 25, 1816, he passed the examination for License of the Apothecaries' Hall, then, as now, the lowest qualification in England.

A medical student capable of writing such a sonnet as the celebrated one "*On first looking into Chapman's Homer*" was not likely to settle down as junior partner in some suburban or city practice. While at Guy's, Keats had made the acquaintance of Leigh Hunt and other literary men, some of whom recognized the quality of his mettle. So far as is known he never practised medicine, but for four years lived, as he says, "an odd sort of life, here and there—no anchor." He had many warm friends, and his letters to them and to his brothers show great depth of feeling, and often a critical faculty of singular delicacy in one so young.

In 1817 he issued a small collection of poems, and in 1818 the more ambitious *Endymion*, which was mercilessly hammered by the reviews. An article in the *Quarterly* was for long thought to have

hastened his death, but the basis for this widespread belief is chiefly the jaunty lines from "Don Juan:"

"'Tis strange the mind, that very fiery particle,
Should let itself be snuffed out by an article."

In 1818, and again in 1819, he buried a brother with pulmonary tuberculosis, of which disease his mother had died. In February, 1820, he had a hemorrhage from the lungs after exposure, and from this date he began a hopeless struggle against rapidly advancing tuberculosis. In 1820 Keats issued *Lamia, Isabella, and Other Poems*, the volume which contains his greatest treasures. In September he sailed for Italy with his friend, Severn, an artist. During the months of January and February he was in Rome, attended by Dr. (afterward Sir James) Clark, and nursed with unrelenting care by Severn, whose account of Keats' illness is one of the most touching descriptions in literature.

Racked by a hopeless passion, and consumed by an insatiable disease as the end drew near, when the "shadow of white death" was o'er him, he asked to have inscribed on his tomb the line, *Here lies one whose name was writ in water*. But the world has judged differently, and has taken the verdict of the man whose heart was so soon to rest beside him, and whose *Adonais* is an everlasting tribute to his memory.

EDITORIAL COMMENTS.

A "Shake-up" in the New York City Hospitals.—Ever since the recent request from the Commissioners of Charities and Correction for the resignations of all the members of the staff of the Harlem Hospital, there has been a feeling of uneasiness among those connected with several of the hospitals under the control of the Commissioners. Only last week, one of the former staff of the Harlem Hospital declared before the New York State Medical Association that he understood this process of ousting, or "reorganization," as it is considerably termed, was to be extended to the other hospitals. His prediction was soon verified. A few days ago the Commissioners of Charities abolished the consulting and medical boards of all the hospitals under their control, with the exception of Bellevue Hospital, in which the new system of making appointments has been in operation since 1882. The result of this radical step has been the creation of one-hundred-and-twenty vacancies in the hospitals. Many of these physicians have given faithful and gratuitous service for many years, only to find themselves unceremoniously removed, without any charges having been made against them, and with not even a conventional "thank you" for what they have done. There is small wonder, therefore, that such a sweeping measure should call forth a burst of indignation from the medical profession, and it has already found expression in resolutions adopted by the New York County

Medical Association, in which it is declared that this action of the Charities Commissioners is not only unjustifiable, but is, in fact, a slur upon the hospital-physicians who have so freely given of their time and skill.

According to the resolutions adopted by the Commissioners, the College of Physicians and Surgeons, the University Medical College, the Bellevue Hospital College, and the Fourth Division of Bellevue Hospital are requested each to make a certain number of nominations to the visiting staff of each of the other hospitals, and the consulting staff of Bellevue Hospital, created in a similar manner, is to act as a consulting board for these other hospitals. It is openly charged that the Commissioners have been induced by the medical board of Bellevue Hospital to take this action because that hospital found itself short of clinical material. Some of the physicians who feel especially aggrieved at the action of the Commissioners do not hesitate to assert that, in addition to affording these colleges an opportunity to secure more clinical material, this new system gives a little more political power to the President of the Charities Commission.

But the chief objection made, and one which can hardly be gainsaid, is that under the new *régime* the appointments to the visiting staffs of these hospitals will be made solely from the three large medical colleges already mentioned. The Commissioners, on the other hand, defend their action by stating that, as the system had worked well in Bellevue Hospital for a number of years past, they were anxious to improve the other hospitals by adopting the same system in them all. They also say that the measure is intended to remove the appointments entirely from political influence. Undoubtedly, to remove the appointments beyond the reach of politics would mean a great improvement in the service of the hospitals, but, if we mistake not, there is a good deal of politics in certain medical circles, and a "trust" composed of three powerful medical colleges, controlling a large and valuable patronage, is more than likely to be so tainted. It certainly does not seem right or just that these medical men, many of whom have conscientiously served these hospitals, and have given their best years to the work, should be thus peremptorily ordered to stand aside and make room for whomever it may please the colleges to put in their places. The Commissioners say that it will be found, when the appointments are announced, that many of the former incumbents have been retained. So far, so good; but how about those who are dropped without a charge against them, without a hearing, and with no means of redress? If these hospital-positions carry with them a great deal of prestige—and it cannot be denied but that they do—can such arbitrary removal fail to work a gross injustice to those who have not sufficient influence with the colleges to secure their reinstatement?

School-children and Food.—The Board of Education of New York City refers to parents the question, Whether one hour's recess for school-children is too short or not? A member of the Board thought that too little time was allowed the children to digest their food, and that, as a consequence, dyspepsia resulted. The teachers, on the other hand, maintain that the extra half-hour recess that it is proposed to give the children would only be spent in play, that the meals would be eaten as hastily as ever,

and that nothing would be gained; the parents of the children have, therefore, been asked to state their views on the subject in writing to the Board.

A heavy dinner eaten hastily, violent exercise immediately after, and then the school-task, is surely not conducive to sound digestion, but lengthening the recess will hardly bring about the desired result. The higher schools and many private schools accomplish all that is necessary in one session, and why cannot the other divisions do the same? A light luncheon during the forenoon would be sufficient to appease hunger in even the youngest child, and then after a second meal at home at two o'clock the rest of the afternoon could be devoted to play or such other studies as now come in the evening, the heaviest meal occurring at six o'clock. Many persons are at present concerning themselves with the matter of supplying school-children with proper lunches, and the New England Kitchen has done much in this direction in the city of Boston; but why not go a step further and serve a hygienic luncheon to all the children in the school-room at public expense, thus giving them an acceptable object-lesson on the subject of foods, their preparation and value, and teaching them ordinary table-manners. But more than this, what a blessing these meals would be to the thousands of little children who now come to school practically with empty stomachs. This would be charity? Yes, but it would have none of its evils and all of its benefits, as it would be regarded in the same light as free school-books are now, a right shared in by all without distinction of class.

All children are wards of the State, the richest as well as the poorest, the honest as well as the delinquent, and it is the State's business to see that they receive a healthful education as well as a helpful one. It is the duty of the State to do this because it is a matter of self-protection and more needed than the building of warships or the equipment of armies; the one, in fact, often makes the other unnecessary. A proper education, we maintain, is dependent on proper body-nutrition; this question of feeding has more to do with the intellect, and with morals, too, than most philosophies account for, and some day our pedagogues will be as much concerned about the building of brain-structure as they are now in the adornments of intellectual trappings. The feebly nourished brain-cell becomes warped and bent under its burdens and gives way, just as the starved bones do under the weight of the body. The fault is not so much in the weight, but in the weakness of the structures. When all children will have plenty of exercise and plenty of healthful food, then only can we expect to have a race of healthy, well-educated, noble-minded beings. Any objection to free school-luncheons on the ground that the measure is socialistic or paternalistic seems to us unwarranted and puerile.

We believe in compulsory education, but studying is working, and the State does wrong when it compels a child to work on an empty stomach or if insufficiently fed. On the other hand, it derives from the wise education of every individual a benefit that cannot be valued in dollars and cents, and should do all in its power to foster such education.

Faith-healing and the Pulpit.—There is no question that the scientific and rational spirit is abroad in the land and is getting "abroad" every day. It has long been

a matter of deep regret to our profession and to scientists generally that the one great survival of the credulity of the savage stage of our development, the faith-healing delusion, was almost unanimously endorsed and supported not only by the clergy, but also by the great mass of evangelical opinion. It is true there were many honorable exceptions and that a considerable portion of the more thoughtful orthodox element displayed no enthusiasm over or even approval of these "modern miracles," but even their lips were largely sealed by such texts as "With God all things are possible," "The prayer of faith shall heal the sick," etc., and they hardly dared to deny the, at least possible, divineness of these manifestations. As a result they have become extraordinarily prevalent of late not only among the ignorant peasantry of Europe, where they occasion little surprise, but also all over this enlightened Republic of ours, whose intelligence and freedom from superstition has long been one of our proudest boasts. No small proportion of our "revivalists" have gradually come to claim "the gift of healing," and scarcely a town or neighborhood can be found through the Middle and Western States which has not been visited by one or more "faith-healers" within the last few years.

But like all other evils, this one has brought its remedy with it, and signs of a healthy reaction within the church itself are now plainly to be seen. The protest was started some years ago by the brilliant and eloquent Methodist divine, Rev. J. M. Buckley, of New York, and less prominently by a number of other ministers, and the good sense of the churches has now become aroused to such a degree that a considerable part of both pulpit and pen not only refrain from approving, but even openly denounce, all such displays as unchristian as well as irrational and based upon either ignorance or deceit. An interesting illustration of this change of opinion has just been furnished by an incident reported from a group of towns in Iowa. A certain Mrs. Woodsworth has been holding a "series of meetings" in 5 of these villages, with the result that many miraculous cures are reported from each place. To the great credit of the ministers of the district, most of them, instead of keeping Gamaliel's counsel as hitherto, "lest haply ye be found even to fight against God," have come out openly in disapproval not only of these "cures" in particular, but of the faith-cure in general. In Lake City one divine preached against the delusion from the pulpit, was answered by a more credulous brother from his pulpit, and from that they betook themselves to the papers, and the whole community was set by the ears. So bitter did the dispute become that as a last resort both parties agreed to appeal to the decision of that uncrowned pope of modern evangelicism, Dwight L. Moody. Greatly to the surprise of the "faithful" party to the dispute he promptly decided against the evangelist, declaring that he "took no stock in faith-cure or modern miracles."

We cannot but rejoice that we are no longer to combat this delusion single-handed and welcome heartily our new allies. May we not hope that they may be led a step further in the same direction and come to recognize the unwisdom of permitting their names to appear on the testimonial pages of other equally marvellous and even less genuine "cures" wrought by the latest commercial panacea or quack nostrum.

A Brave Medical Man.—That was a brave act by a medical man, Charles Toller, by name, who during a gale off the coast of England risked his life in the effort to save another. As related by the *British Medical Journal*, a man, the sole survivor of the crew of a schooner that had foundered, supported by a life-belt had managed to struggle on to the rocks and lost consciousness. As it was impossible to reach the man from below, Dr. Toller, with a life-line fastened under his arms, descended from a shelving portion of the cliff to the spot where the sailor lay and instituted measures of resuscitation. Efforts to haul the sailor up the cliff, as well as an attempt to reach the spot in an open boat, were unsuccessful, but as the tide changed a boat succeeded in reaching and rescuing the man, who unfortunately died of exhaustion.

Remarkable Impertinence is shown in a circular that is being sent by an advertising firm to physicians, offering prizes of pictures and books for lists of names of patients suffering from a certain class of diseases. The expressed object of the advertiser is to send directly to these patients "literature," the object of which is, we should suppose, readily enough understood. We often marvel in political life to see the egregious stupidity ascribed to the poor dupes of schemers, but we can only wonder more if there is any considerable number of medical gudgeons so poor in understanding as to rise to a bait like this.

REVIEWS.

SYSTEM OF SURGERY. Edited by FREDERIC S. DENNIS, M.D., Professor of the Principles and Practice of Surgery, Bellevue Hospital Medical College, etc., assisted by JOHN S. BILLINGS, M.D., LL.D. Edin. and Harv., D.C.L. Oxon., Deputy Surgeon-General U. S. A. Vol. ii. Minor, Plastic, and Military Surgery; Diseases of the Bones; Orthopedic Surgery; Aneurism; Surgery of the Arteries, Veins, and Lymphatics; Diseases and Injuries of the Head; Surgery of the Spine; Surgery of the Nerves. Profusely illustrated. 8vo. Pp. 926. Philadelphia: Lea Brothers & Co., 1895.

THE second volume of this important work opens with an abundantly illustrated article on "Minor Surgery" by Dr. H. R. Wharton, of Philadelphia. The subject is very fully treated—with a degree of detail, indeed, in marked contrast to the style maintained in most of the other articles. Some matters are introduced here which we presume will come up again and be far more thoroughly discussed elsewhere. Thus we can hardly suppose that electrotherapy, cystoscopy, and urethroscopy are to be finally dismissed with the mere mention here given them. And we think it would have been better either to omit all reference to the exploring-needle, or to state that its use has been very properly abandoned by most surgeons.

The second article, by Dr. G. R. Fowler, of Brooklyn, deals with "Plastic Surgery." It is very sound and comprehensive.

Next follows an essay by Lieutenant-Colonel Forwood, Deputy Surgeon-General U. S. A., on "Military Surgery and the Care of the Wounded on the Battlefield."

For medical officers of the Army this is, of course, not intended; and while it will doubtless be of interest to many civilians, the space allotted to it—twenty-eight pages—is insufficient for it to be of practical value.

The article on "Diseases of the Bones," by Professor Senn, of Chicago, is very good, as is also that by Dr. V. P. Gibney, of New York, on "Orthopedic Surgery."

Professor L. A. Stimson, of New York, contributes a very interesting discussion of aneurysms in general, supplemented by a description of the disease as affecting special vessels by Dr. Percival R. Boulton, of the same city.

"Arteritis and the Surgery of the Veins" form the subject of a brief article by the editor, Professor Dennis.

Professor F. H. Gerrish, of Portland, Me., gives an essay on the "Surgery of the Lymphatic System." We should have been glad if he had made fuller textual explanation of his admirable diagrammatic illustrations of the anatomy of the lymphatic glands, or "nodes," as he prefers to call them.

The next article is by Professor Roswell Park, of Buffalo, on "Diseases and Injuries of the Head." It covers 289 pages, and is by far the most original and important chapter in this volume, embodying the latest developments of the subject. The author has drawn largely upon personal observations, for which he has had abundant opportunity; and, while freely quoting foreign authorities, has extended ample recognition to the labors of his own countrymen.

"The Surgery of the Spine" has been allotted to Professor Keen, of Philadelphia, and is very ably set forth.

The volume concludes with an interesting and well-written essay upon "Surgery of the Nerves," by Professor John B. Roberts, of Philadelphia.

As a whole, this second instalment maintains the standard of the first part of the work. The articles are written by men whose practical experience entitles them to speak *ex cathedra*, and they have performed their task with credit to themselves. We are well aware that the changes that have been introduced in the methods of instruction in medicine have modified in a great degree the requirements of students and recent graduates in regard to text-books; and it may be that the present work is more nearly adapted to this purpose than it would have been a decade ago. Physicians of some years' standing, who have kept abreast of the advances in science, will find its perusal interesting and profitable. The mechanical execution of the book is such as to make it very agreeable to the reader.

PRACTICAL DIETETICS, WITH SPECIAL REFERENCE TO DIET IN DISEASE. By W. GILMAN THOMPSON, M.D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in the University of the City of New York; Visiting Physician to the Presbyterian and Bellevue Hospitals. Octavo, pp. 80. New York: D. Appleton & Co. 1895.

THIS valuable work on Dietetics has been prepared, according to the author, in order to furnish a "textbook in which the practitioner of medicine may find detailed the appropriate diet for each disease which is at all influenced by right feeding." The volume, however, is more than a dietary manual, as a glimpse at the contents will show.

Since Pavy's work on "Food and Dietetics" no treatise on the same subject of any importance has appeared, and this volume is therefore especially welcome, as it embodies all the newer researches in alimentation. In the opening chapters of Part I the elementary composition of foods and their force-production and economic value are considered.

The classes of foods are then taken up in turn. Milk receives full treatment, all the newer ideas in regard to the alteration of this food-product by microorganisms, the methods of sterilization and preservation, and the various forms of modified milk being considered at length; forty-two pages being devoted to the last subject alone.

Part II is devoted to the consideration of stimulants, beverages, and condiments. Part III is concerned with the preparation of food and cooking, the quantity of food required by the normal body, and the results of starvation and an improper dietary. In this connection the latest researches are made use of. The foods for special conditions, such as age, race, sex, climate, and season, are treated of in Part IV.

Part V considers the digestion of food and the conditions that especially affect it, such as mental emotion, exercise, and sleep. Artificial digestion, elimination of food-waste, and abnormal digestion are subjects likewise treated of in this part.

Valuable as the foregoing pages are, the chief purpose of the book is found in the chapters that follow. In Part VI "Diseases Caused by Dietetic Errors" are fully considered and the various contaminations of food are spoken of. A description of methods used in feeding the sick is contained in Part VII.

"Diet in Disease" is the heading of Part VIII, and here pathology and symptomatology are largely entered into; the author evidently could not forego the opportunity of presenting his ideas on clinical medicine. Seventy-five pages are devoted to the management of diseases of the alimentary canal; all of the more important chemist tests for the gastric secretion are here detailed. The various forms of diarrhea of infancy, constipation, and chronic and acute dyspepsia are ably handled.

Under the heading of "Diseases Especially Influenced by Diet," obesity, with the special forms of treatment, the rheumatic diathesis, gout, and diabetes mellitus, are dealt with at length. Diabetes has thirty pages devoted to it, and the various theories of the causation of this disease are briefly considered.

Part IX contains hospital, army, and prison diets, diets useful in occupations and in athletic training; and the food of infants, young children, and school-children is also considered.

In an appendix are found various receipts for preparing food for invalids.

Altogether we believe this work to be one of the most valuable of recent publications, in that it meets a real need and combines in one volume and in logical relation all that is of worth on the subject.

EYESIGHT AND SCHOOL-LIFE. By SIMEON SNELL.
Bristol, Eng.: John Wright & Co.

THIS admirable monograph on preventive ophthalmology is most welcome. There has long been a field for just such literature. When the principles here laid

down have become the property of physicians and teachers everywhere, then, and then only, can we banish the German specter, myopia. We are fast becoming a race of students. The author warns against the ocular evils that wait upon this intellectual evolution. He brings to his work extended experience, wide research, and a knowledge of the whole domain of ocular hygiene that lend to his statements authority. The style is direct, yet easy and pleasing. The volume is so written that it is equally interesting to the layman, the general physician, and the specialist. We wish that Dr. Snell's monograph might be found on the desk of every doctor and educator.

TWENTIETH-CENTURY PRACTICE; AN INTERNATIONAL ENCYCLOPEDIA OF MODERN MEDICAL SCIENCE BY LEADING AUTHORITIES OF EUROPE AND AMERICA. Edited by THOMAS L. STEDMAN, M.D. In twenty volumes. Volume iii. Occupation-Diseases, Drug-Habits, and Poisons. 8vo, pp. viii, 639. New York: William Wood & Co., 1895.

THE third volume of this noteworthy undertaking contains an article of 137 pages on Alcoholism and Drug-Habits, by Norman Kerr, of London; one of 36 pages on Shock and Collapse, by George F. Shrady, of New York; one of 23 pages on Seasickness, one of 34 pages on Heatstroke, and one of 19 pages on Frostbite, by Albert H. Gihon, of the U. S. Navy; one of 31 pages on Mountain-sickness, by George von Liebig, of Munich; one of 15 pages on Osteomalacia, by W. T. Councilman, of Boston; one of 186 pages on the Diseases of Occupations, by James Hendrie Lloyd, of Philadelphia; one of 92 pages on Poisoning, by Beaumont Small, of Ottawa; and one of 30 pages on Poisoning from Lead, Arsenic, Zinc, Copper, Mercury, Silver, and Phosphorus, by James Stewart, of Montreal. This is a notable collection of names, and it may be said that the articles as a whole are fairly representative in character and comprehensive in scope. Lack of space forbids a detailed analysis of the individual articles, and we can make reference to but a few points that seem to justify special comment. In the first place, the article dealing with metallic poisoning, by Dr. Stewart, is rendered almost superfluous by the previous consideration of all the forms of poisoning therein discussed, except that of silver, in the article on The Diseases of Occupations, by Dr. Lloyd. The latter article is an elaborate monograph, which might have been somewhat abbreviated by the omission of an interesting, though perhaps unessential, digest of the laws bearing upon the employment of women and children in the United States. This valuable article deals principally with a description of those injurious effects of diseases that are direct, characteristic, and indisputable. These diseases are considered in three classes, according as their effects are due respectively to injurious substances, such as lead and the various metals; to injurious environment, such as cold, heat, compressed air, and the like; and to injurious exercise, including the occupation-neuroses. We have already referred at considerable length (see THE NEWS, September 14, 1895, p. 301) to the views of Dr. Kerr on the subject of inebriety. All in all, the volume is a most acceptable one. The type is large, the impression clean and clear, and the paper

substantial. A little more care in proof-reading would have prevented the misprint of 237 for 287 in the Table of Contents, would in two places on page 28 not have permitted *special* atrophic paralyses to stand for *spinal* atrophic paralyses, and would not have allowed *Mac-Cormac*, in the article on Shock, to be several times spelled *MacCormack*.

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting, October 1, 1895.

EDWARD D. FISHER, M.D., PRESIDENT.

NEURITIS OF THE BRACHIAL PLEXUS AS A SEQUEL OF PNEUMONIA.

DR. W. M. LESZYNSKY presented a man of 36, who five months ago had suffered from an attack of neuritis, involving the brachial plexus upon both sides. This condition had developed during convalescence from acute pneumonia. There was no history of traumatism or exposure to cold, nor was there any evidence of alcoholism, syphilis, or rheumatism. Dr. Leszynski looked upon the pneumonic infection as the direct cause of the neuritis. He said that at present there was a pronounced and typical paralysis of the left serratus magnus, and also some atrophy of the deltoid and supraspinatus. Upon the right side there was well-marked atrophy of the deltoid, with absolute anesthesia in the cutaneous distribution of the circumflex nerve, and complete loss of faradic irritability. There was also some atrophy of the supraspinatus.

HEREDITARY CEREBELLAR ATAXIA.

DR. JOSEPH COLLINS presented a patient illustrating so-called hereditary cerebellar ataxia. The patient, a boy of 11, was the second of two children. Both his parents were still living, and, aside from a marked tuberculous history on the paternal side of the family, no hereditary taint could be traced. The child had never had spasms, and had passed through the ordinary infectious diseases of childhood. He began to talk and walk, and the teeth developed, at the customary time. The mother said he had never been able to walk or talk like other children. He was always "stiff in his joints," "easy to fall," etc.; he never climbed and played like other children, though he tried to do so. When four years old it was noticed that he was becoming very near-sighted, and glasses were applied, and had been worn since that time. In February, 1894, after returning from an outing with his father, he vomited a large quantity of liquid, and later, clotted blood. A few days before this he had had a fall down a flight of stairs, and to this fall the parents attributed his illness. He had been attending school since his fifth year, and had been repeatedly sent home on account of inability to make any advance. A year ago he had been returned from school permanently. For a year or more there had been periods in which his mother said he could not use the left side of the body, and at such times the arm and leg had become very unsteady and his speech more unintelligible. Great difficulty had been experienced in keeping him warm, especially in the winter. The speaker said that

mentally the boy was peevish, irritable, and irascible. He was affectionate, fond of animals and pictures, and, while he could be led, he could not be dominated. When seen on July 21, 1895, it was noticed that he was tall for his years, that his face looked very old, his skin looked and felt dry, and the flesh felt pultaceous. The right side of the face was better innervated than the left. There was very slight grip in the hands. The knee-jerks were exaggerated, especially on the right; the elbow-jerk was lively; there was moderate ankle-clonus. The gait was shambling and reeling; the head was bent forward and the boy walked as if intoxicated; he stood fairly well with his feet wide apart; Romberg's sign was not present. The genital organs were extremely undeveloped. The child's manner of rising from the recumbent posture resembled that of one suffering from progressive muscular dystrophy, except that he did not "crawl up the legs." There was no real nystagmus, but the fixation-power of the eyes was not good, and the eyeballs twitched and there was slight weakness of the external ocular muscles. There was progressive myopia, but Dr. W. A. Holden, who examined the eyes, stated that no real change could be made out in the background. The speech was ataxic, explosive, and sometimes quite jerky. It was almost impossible for the boy to go up and down stairs. Ataxia of the upper extremities was very marked. Mentally he was very defective, particularly in his associative faculties.

The speaker said that this case, although not a pure one, would tend to corroborate the view taken of these cases by Nonne, to whom more than to anyone else credit was due for calling intelligent attention to them. Marie, who discussed Nonne's cases and other cases, suggested the name hereditary cerebellar ataxia. He took for granted a factor which apparently was not necessarily constant, viz., heredity, unless we use the terms hereditary and familiar interchangeably. The sister of this boy, who died in her second year, was affected in the same way, for the parents give a very clear description of her condition. Another element stated by Marie to be constant was optic atrophy, yet in some cases recently reported, and in Fraser's case, the first case to be substantiated by autopsy, this symptom was absent. The condition has been more commonly observed in patients older than the one just presented. In fact, adolescence is the period in which it is usually recognized. It was hardly necessary to refer to the apparent relationship between Friedreich's disease and this condition.

CYSTIC TUMOR OF THE BRAIN.

DR. L. STIEGLITZ presented a young woman whom he had exhibited to the Society in January, 1893, after she had been operated upon in June, 1892, for a cystic tumor of the brain, situated in the right arm-center.¹

The cystic tumor was subcortical, about 1½ in. deep, and its walls had been found perfectly smooth. About an ounce of straw-colored, serous fluid had escaped from the cyst at the operation. In discussing the case at the time it was clearly shown that the cyst could not have been of vascular or of parasitic origin, and it was the conclusion that a glioma was at the bottom of the trouble, and on that account a recurrence of the growth had been feared. During the following two years the

¹ Amer. Journ. Med. Sci., June, 1893.

patient had done very well, and had recovered the use of her arm sufficiently to attend to her housework, but had been subject to more or less frequent focal epileptic seizures involving the left hand or the entire left arm and side of the face. During this period she had also had about five general convulsions, which had set in with the same focal symptoms. In March of this year the patient had begun to complain of headaches, the power in her left hand had again perceptibly diminished, and the focal seizures had occurred more frequent than ever—from one to three times a day. Dr. Koller, who had examined her eyes frequently, found for the first time a beginning cloudiness and swelling of the disc. A recurrence of the original neoplasm or a refilling of the old cyst was suspected, and Dr. Gerster performed a second operation upon the patient in April of this year. Upon exposure of the brain a very small maroon-colored mass about the size of a filbert was found at the point where the cyst had been. This mass was removed, and as it evidently infiltrated the surrounding brain-tissue a broad ring of the latter was excised. The patient made a good recovery. She had two severe general convulsions when the dressings were first removed, but had been free from all seizures ever since—a period of six months. Her arm was at first completely paralyzed, but she had now recovered its use to a certain extent, the only marked paralysis left pertaining to the index-finger, which could not be fully extended, and to the thumb, which could be flexed, extended, abducted, and adducted only very imperfectly. Tactile sensibility was less acute in the paralyzed limb than on the other side. There was marked disturbance of the muscular sense, the patient being very uncertain about passive movements in her finger-joints, especially in those of the thumb and index-finger. The deep reflexes of the arm and the knee-jerk were greatly exaggerated on the affected side. Curiously enough, they were also distinctly exaggerated on the healthy side, though to a far less degree. The microscopic examination of the excised tumor was very interesting. The old cyst-wall was found collapsed, and originating from a point in this wall a small spindle-cell sarcoma was found. This could be seen in the specimen. Sections through the ring of brain-tissue removed showed the new growth to be of a very malignant and complex type. From its character at different points it would have to be termed a melano-glio-angio-spindle-cell fibro-sarcoma. The brain-tissue was infiltrated, and no doubt sooner or later the patient would have a recurrence of the growth.

The case showed that cystic tumors of the brain were not as innocent in character as many would believe, and on that account the excision of the cyst-wall would be advisable in all cases of the kind. If this were not possible at the first operation, it could easily be done at a subsequent operation, a few months later, when the wall would be found compressed into a small, solid mass.

DR. B. SACHS expressed the belief that the original cyst might very well have been of hemorrhagic origin.

THE PRESIDENT said that the clinical history of the case prior to the first operation would throw light upon that question.

DR. STIEGLITZ said that in order to save time he had omitted the details of the original history. The patient had been perfectly well up to December, 1891, when she had

been suddenly taken with twitching in her right thumb and forefinger. The twitching had spread rapidly up the arm to the face, and had ended in a general convulsion. In December the patient had had three or four more general convulsions of the same character, but none after this time. She had been subject, however, to frequent focal seizures confined to the right hand. When first seen in December there had been no loss of power in the arm. The weakness in the arm had developed the following March, and had gradually increased until, in June, the time of the first operation, it had become very marked. In spite of the absence of all general cerebral symptoms, the diagnosis of progressive, destructive focal disease, probably a tumor, had been made. The slow and late development of the paralysis after the onset of the symptoms of cortical irritation positively excluded any vascular lesion.

AMYOTROPHIC LATERAL SCLEROSIS.

DR. WILLIAM HIRSCH presented a case of amyotrophic lateral sclerosis which had developed in a patient who had formerly had anterior poliomyelitis. M. D., 45, gave a negative history as regards syphilis and heredity. About three years ago he noticed a stiffness and weakness in his left leg, which gradually became worse. After some time the right leg also became affected. He soon became unable to use his legs in working his sewing-machine (being a tailor), and his gait became so impaired that he was not able to stand or walk for any length of time. When he came under treatment, four weeks ago, he had complained of nothing else, and there were no sensory symptoms or disturbance of bladder or rectum. The examination showed an atrophy of some of the muscles of the trunk and the upper extremities. The right deltoid, the supraspinatus, and especially the thenar eminence on the right hand showed fairly marked atrophy. There was fibrillation in the muscles of the trunk and shoulder, increased by tapping them with the percussion-hammer. There was also diminished electric excitability, and in some muscles the reaction of degeneration was present. There was no atrophy of the muscles of the lower extremities, and the electric reaction was perfectly normal in these parts. The tendon-reflexes of the lower extremities were considerably increased; the knee-jerks were extremely exaggerated; and there was bilateral ankle-clonus. The last very frequently came on spontaneously, to the great annoyance of the patient. Sensation was perfectly normal in all parts of the body, and the senses of pain and temperature were unimpaired. There were no abnormal conditions in the function of the cranial nerves, with the exception that the tongue was slightly atrophied, and there was a marked masseter-reflex. Speech was in no way affected. There was no nystagmus, and the ophthalmoscopic examination showed perfectly normal conditions.

This was evidently a typical case of amyotrophic lateral sclerosis, and the man was brought here because of a possible relation between the present disease and the old affection.

An examination now showed very marked atrophy of the muscles of the left shoulder and upper arm, but the patient did not think it worthy of mention, as he said it had existed as long as he could remember. This appearance, together with the history, showed that he had

had in childhood an attack of infantile paralysis. This brought up the interesting question—Does there exist any relation between the present disease and the anterior poliomyelitis, and if so, what is the nature of this relation? Dr. Hirsch said that Ballet and Dutil were the first to enter upon a discussion of this subject. They pointed out that an infantile spinal paralysis might give rise in later life to various affections of the spinal cord, but that they were all limited to the gray matter of the anterior horns. The irritation of the cord by the old lesion enfeebled, they said, the medulla, and made it a *locus minoris resistentiae*, which, on any occasion, might become subject to further disease. Charcot expressed the view that there existed in some individuals a certain disposition, a kind of hereditary vulnerability of the ganglion-cells of the anterior horns, which at one period of life might give rise to acute anterior poliomyelitis, and at another to progressive muscular atrophy, so that in fact both diseases would form different periods of one and the same pathologic process. In some cases of infantile spinal paralysis, Charcot said, the old scar produced by the inflammatory process in the gray matter of the anterior horns, formed a latent, but permanent, inflammatory focus, which, at any time, might light up afresh, and cause a new set of symptoms. A similar view, the speaker said, was held by Strümpell who, on the theory of the infectious origin of anterior poliomyelitis, compared the scar in the anterior horns to an old tuberculous focus which was capable of setting up a new inflammation at any time. So far as he knew, the case presented differed from all others recorded in literature in that the later disease was not limited to the anterior horns of the gray substance, but that other parts of the cord were also involved, *i. e.*, both lateral pyramidal tracts. He would not attempt to decide which of the theories applied to this case, but it could be proved with absolute certainty by the history of the clinical symptoms that the pathologic process of the present disease started from the place where the old scar of the anterior poliomyelitis was located. This lesion lay apparently in the left horn of the cervical region of the cord. As the man first noticed weakness and stiffness of the left leg, the process must have approached first the left pyramidal tract which lay next to the scar. Then, after the affection of the right horn, which showed itself in atrophy of the muscles of the right upper extremity, the pathologic process spread over to the right pyramidal tract, causing a spastic condition in the right leg. Whatever the theory regarding the nature of the relation between the two diseases, there could be no doubt that there existed such a relation between infantile spinal paralysis and various spinal diseases of later life. Further observation and study of similar cases might throw more light upon this subject, as well as upon the etiology and nature of the diseases in question.

A REPORT OF A SERIES OF CASES OF MULTIPLE
NEURITIS IN INFANTS IN THE CITY OF
BRIDGEPORT, CONNECTICUT.

DR. GRAEME M. HAMMOND read a paper in which he reported a series of cases of multiple neuritis in infants in the city of Bridgeport, Conn. There were ten cases in all, the patients ranging from 4½ months to 4½ years in age. In all but two cases there were distinct premoni-

tory symptoms of headache, vomiting, fever. Following this there was a gradual and progressive paralysis, usually beginning in the feet, and extending to the upper extremities, and in some instances, involving the muscles of the trunk, and in two cases, the muscles of deglutition. Accompanying the paralysis there was pain, both spontaneous and on passive motion, and the nerve-trunks were very sensitive to pressure. The area of pain and tenderness accompanied the extension of the paralysis. The reflexes were abolished, and the electric reactions of degeneration were well marked. Two of the cases exhibited symptoms of spinal meningitis, in addition to the neuritis. One case, the youngest, 4½ months old, died after an illness lasting one month. The muscles of deglutition became paralyzed, and the child died from exhaustion. In the other cases recovery began in from four to six weeks, but was not completed until from three to four months. No similar cases were discovered in neighboring towns. After referring to the epidemics of anterior poliomyelitis which have in the past been reported, both in Europe and in America, the reader concluded by accepting the theory of their microbic origin, and expressed the belief that these cases of neuritis were due to a similar cause.

The author expressed his indebtedness to Dr. John C. Lynch, Dr. Samuel M. Carllick, and Dr. J. W. Wright, of Bridgeport, for the reports of cases and for their courtesy in affording him the opportunities for personal examinations.

CORRESPONDENCE.

THE COLLEGE-GRADUATE IN MEDICAL SCHOOLS.

To the Editor of THE MEDICAL NEWS,

SIR: Can the college-graduate properly take advanced standing in a medical school requiring four years' attendance on lectures? Most medical schools have answered in the affirmative, and admit to the second year's work graduates of literary and scientific colleges who have pursued certain biologic studies. The University of Michigan goes further and admits to the third year in the medical department the graduates of its own literary department who have pursued a prescribed course of study.

The preliminary studies required of the college-graduate by the University of Pennsylvania are General Biology, Comparative Anatomy, Botany, Chemistry, Physics, Histology, Human Anatomy, Physiology, Zoology, and Embryology. The University of Michigan (medical department) devotes the two first years *wholly* to laboratory-teaching, and the third and fourth years to practical medicine and surgery. The branches taught the first year are General and Organic Chemistry, General Anatomy, Bacteriology, Physics, and Histology. During the second year the subjects are Regional and Surgical Anatomy, Anatomy of Nervous System, Hygiene, Embryology, Physiology, Physiologic Chemistry, Histology, and Electro-therapeutics.

The preliminary subjects required at the University of Pennsylvania are now taught in all first-class colleges. If human anatomy cannot be practically taught at a rural college, this branch can readily be made up when

the student enters the medical school. The question next arises, Can ordinary colleges do a second year's work, such as is mapped out by Michigan University, if the amount of laboratory-work there required is desirable? The answer given is that, with the present rate of development in the smaller colleges maintained for a few years, they will generally be equipped to do this amount of work. If this work is desirable, *it can be done better in the biologic department of a non-medical school than elsewhere.* Whoever has passed through a medical college knows how difficult it is for the student to concentrate his efforts on subjects which he thinks do not directly bear on medicine. Thus he cannot, and does not, study chemistry as he studies anatomy or materia medica. But in a non-medical college chemistry is pursued without any such difficulty as is experienced in a medical school. The cost of living is generally less in the small towns where literary colleges are situated than in the large cities. There is also much less to attract the attention of students from their studies. The disadvantage which is seen is that the study of practical medicine is postponed for two years, and the course is shortened by that much time. However, it would be no more difficult to maintain a preliminary medical school to do two years' work in such places as Meadville, Lancaster, Easton, Bethlehem, and other smaller towns, than at Burlington, Vt., Hanover, N. H., and, as was done in the past, at numerous villages and small towns.

Is it desirable to do this work in the literary college? I believe that it is desirable to have as many cultured and educated medical men as possible. I think this offers one solution of a problem which confronts educators to-day. The preliminary requirements of the classic and scientific college are greater now than they were a generation ago, by fully two years. The medical courses have been advanced from two years to four years. Fully four more years of time are now required to take a collegiate course, and then a professional course at a university, than was required a generation ago. Many young men are cutting the Gordian knot by entering the universities at once on leaving the high school. The universities, on their part, seem to offer little opposition to the entrance of these untrained and unprepared men.

While the work here outlined is recommended to literary and scientific institutions, it is hoped that it will not be undertaken until there is secured sufficient means to properly equip a biologic department. One science-professor, with text-books, will not be sufficient. There must be several well-equipped teachers and laboratories well provided with apparatus, models, charts, and dry and wet preparations. It is the function of the college to provide these for the community in which it exists.

Respectfully yours,

LEWISBURG, PA.

GEO. G. GROFF,
Bucknell University.

SURGICAL SHOCK AS A CAUSE OF DEATH IN WOMEN.

To the Editor of THE MEDICAL NEWS,

SIR: In the issue of THE MEDICAL NEWS of September 7th there appeared an editorial note upon the question of "Surgical Shock as a Cause of Death in Women."

The writer discusses the question as to whether women are more liable to surgical shock than men, as from the year 1890 to 1894 there have been reported to the Philadelphia Board of Health 63 deaths from shock in males and 173 deaths from shock in females. He also refers to the very decided increase in deaths from shock from year to year, there having been only 12 deaths in females from shock in 1890, as against 54 deaths in 1894. These figures certainly are deserving of attention, but I am quite sure that their explanation lies not in any supposed greater liability to death from shock in women as compared with men. I would offer the explanation that these deaths are in a large measure the result of abdominal sections upon women, done by men who have not had a proper training in this field of work. It will be found on investigation, I believe, that these operations have been performed either by general surgeons, whose training has been entirely general and who have not been taught by a proper apprenticeship the difficulties and dangers of abdominal and pelvic surgery, or by the family-physician having an itching "to do a section." I am quite sure that an inquiry addressed to the eight or ten best-known gynecologists and abdominal surgeons in Philadelphia would elicit the fact that in the 5 years in question, all told, they have not reported more than 15 or 20 deaths from shock, although they have undoubtedly performed nine-tenths of the abdominal operations upon women. Deaths from shock in women, after abdominal and pelvic operations, as a broad statement, are so many unnecessary deaths, and represent deaths from hemorrhage or from greatly prolonged operations. Of course, the exceptions are the patients operated upon *in extremis*, and these operations are seldom attempted except by the more courageous of well-trained gynecologists.

It is never pleasant to speak disparagingly of others, but I feel convinced that the foregoing explanation offers the solution of the cause of the great increase of deaths from shock among women. The same evidence can be derived from hospitals in which a few trained gynecologists operate and where many general surgeons and family-physicians also do abdominal operations. This question came up for discussion in the Philadelphia Obstetrical Society, with reference to a hospital in which one of the members of the Society reported extraordinarily good results. When his attention was called to the fact that the official report of the institution gave a mortality about ten times greater than that which he had reported, his explanation was that which I have already given. The hospital itself has a large staff, many of whom did abdominal operations, and, in addition, any physician could take a patient there and operate upon her, so that the number of operators was extremely large. This mortality from shock is one of the fruits of the doctrine, which has had many advocates both as to principle and practice within the past few years, that a special gynecologic training is unnecessary as a preliminary to the practice of abdominal surgery in women.

Very respectfully yours,

CHARLES P. NOBLE, M.D.
PHILADELPHIA, 1637 NORTH BROAD STREET.

Dr. Joseph C. Gilbert, a well-known physician of Chestnut Hill, died on October 26th, at the age of 63 years. He was an assistant surgeon during the Civil War.

HARE'S "THERAPEUTICS."

A Correction.

To the Editor of THE MEDICAL NEWS,

SIR: I am glad that my book on *Therapeutics* is, in the opinion of your reviewer (see MEDICAL NEWS, October 26, 1895), "beyond the range of criticism," because it has reached a fifth edition in five years, but I am sorry that in his desire to criticise he has made a statement which is untrue in regard to acute poisoning by opium. He says that nothing is said of the use of potassium permanganate in acute opium-poisoning, but if you will examine the book you will find it is named as the first antidote to be employed, under the head of "Acute Opium-poisoning."

The book is not intended to be a dispensatory, and descriptions of some of the unusual remedies you name were not inserted in the text because the introduction of the fads of a few clinicians, which, by the by, are either not even mentioned or not commended by the dispensatories, would rob the volume of the usefulness which it seems to possess to the practical doctor.

Yours truly,

H. A. HARE.

PHILADELPHIA, October 25, 1895.

[We regret that the statement made in the review of Dr. Hare's *Therapeutics*, that "in the treatment of acute opium-poisoning nothing is said of the use of potassium permanganate," may give rise to a false impression. Although this omission has been permitted on p. 732 in the *Index of Diseases and Remedies*, we find, since our attention has been called to the matter, that reference is made on p. 277 to the use of the permanganate in the treatment of acute opium-poisoning, while on p. 291, under the head of "Potassium Permanganate," the statement is made that this agent "is the best antidote in poisoning by morphin and that caused by many other vegetable alkaloids."

The antitoxin-treatment of tetanus, rhythmic traction of the tongue, and the use of strontium salicylate, ammonium salicylate, and cinchonidin salicylate, and of thyroid extract, can scarcely be considered either "unusual remedies" or "fads."—ED. MEDICAL NEWS.]

THE MEANING OF THE WORD "TEUTONIC."

To the Editor of THE MEDICAL NEWS,

SIR: IN THE MEDICAL NEWS of October 12th I noticed an editorial comment on my paper "On the Growth of United States Naval Cadets." I regret to say that the term "Teutonic" has been misunderstood by the writer of this commentary.

Webster, edition 1872, gives the following definition: "Teutonic, of or pertaining to the Teutons, or people of ancient Germany; of or pertaining to the ancient Germans in general and to their descendants, among whom are included the Dutch and all who are of Anglo-Saxon ancestry; sometimes, also, in a wider sense, including the Scandinavians; pertaining to anyone or to the family of the languages of these people." Now, the modern North German as well as the South German is a decidedly mixed type, very few of the characteristic racial features of the Teuton remaining in his general make-up. Instances of reversion to this ancestral Teutonic type occur perhaps more frequently in America

than elsewhere for good anthropologic reasons; and anthropologists know that such instances occur also in England and Ireland, where they are by no means rare.

This whole question, however, does not form the important part of my paper, and is merely a matter of casual remark.

Thanking you for your otherwise favorable comment, I am,

Yours very truly,

HENRY G. BEYER.

U. S. NAVAL ACADEMY, ANNAPOLIS, MD.

NEWS ITEMS.

The Revival of the Index Medicus.—The following subscriptions for the *Index Medicus* have been received by Dr. Billings up to October 24, 1895, in addition to those already announced in previous issues of THE NEWS:

Boston, Mass.	New York City (continued.)
Dr. E. G. Cutter,	Dr. W. K. Otis,
Boston Medical Library Ass'n.,	Dr. B. Sachs,
Boston Soc. for Med. Improvement,	Dr. Reginald H. Sayre,
State Board of Health, Mass.	Dr. John E. Weeks,
Bristol, England.	German Hospital and Dispensary,
Bristol Medical Library.	New York State Med. Ass'n.,
Brooklyn, N. Y.	Woman's Med. College of New
Pratt Institute.	York Infirmary.
Buffalo, N. Y.	Philadelphia, Pa.
Dr. John Parmenter,	Dr. F. X. Dercum,
Dr. Roswell Park,	Dr. J. H. Musser,
Med. Dept., Univ. of Buffalo.	Dr. S. D. Risley,
Cleveland, O.	Alumnae Association of Woman's Medical College,
Dr. Hunter Robb.	Philadelphia County Medical Society,
Grand Rapids, Mich.	Philadelphia County Pathological Society.
Medical Library Association.	Pittsburg, Pa.
Nashville, Tenn.	Allegheny County Medical Society.
Dr. Richard Douglas.	Providence, R. I.
New Haven, Conn.	Dr. M. B. Gornberg.
State Board of Health, Conn.	Richmond, Va.
New York City.	Dr. G. B. Johnston.
Dr. I. Adler,	San Diego, Cal.
Dr. Samuel Alexander,	Dr. Wm. A. Edwards.
Dr. L. B. Bangs,	Troy, N. Y.
Dr. Francis Delafield,	Dr. Wm. Wotkins Seymour.
Dr. C. A. Herter,	Washington, D. C.
Dr. A. Jacobi (2 copies),	Medical Society of District of Columbia.
Dr. Mary Putnam-Jacobi,	
Dr. E. L. Keyes,	
Dr. F. P. Kinnicutt,	
Dr. Charles McBurney,	
Dr. John P. Munn,	

There thus remain some 50 or 60 additional subscriptions to complete the guarantee-fund, which must be done before December 1st in order that the *Index* shall be revived. No physician having the advance of his profession at heart will neglect to support and encourage the consummation of this effort.

The Samuel D. Gross Prize of the Philadelphia Academy of Surgery.—The second quinquennial prize of one-thousand dollars under the will of the late Samuel D. Gross, M.D., will be awarded January 1, 1900.

The conditions annexed by the testator are that the prize "shall be awarded every five years to the writer of the best original essay, not exceeding one-hundred-and-fifty printed pages, octavo in length, illustrative of some subject in surgical pathology or surgical practice,

founded upon original investigations, the candidates for the prize to be American citizens."

It is expressly stipulated that the successful competitor who receives the prize shall publish his essay in book-form, and that he shall deposit one copy of the work in the Samuel D. Gross Library of the Philadelphia Academy of Surgery.

The essays, which must be written by a single author in the English language, should be sent to Dr. J. Ewing Mears, 1429 Walnut Street, Philadelphia, before January 1, 1900.

Each essay must be distinguished by a motto, and accompanied by a sealed envelop bearing the same motto, and containing the name and address of the writer. No envelop will be opened except that which accompanies the successful essay.

The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year.

The committee reserves the right to make no award if the essays submitted are not considered worthy of the prize.

The Results of State Medical Examination in Virginia.—The following official figures show the results of the examination of graduates of Pennsylvania medical colleges applying between January, 1885, and October, 1895, to the Medical Examining Board of Virginia for licence to practise medicine in that State:

	Applicants.	Licensed after 1st exam.	Rejected after 1st exam.	Licensed after 2d exam.	Rejected after 2d exam.	Rejected after 3d exam.	Incompetent or withdrew.
Hahnemann Med. College	4	3	1				
Jefferson Medical College	36	25	10	2	1
Jefferson Medical College and University of Virginia	1	1					
Jefferson Medical College and Baltimore Med. Coll.	1	...	1				
Med. Coll. of Philadelphia	1	...	1				
Medico-Chirurgical College	1	...	1	...	1	1	
University of Pennsylvania, Medical Department	9	9					
Woman's Medical College	2	2					

Meetings of Philadelphia Medical Societies:

	Meets.	Next meeting.
Academy of Surgery,	1st Monday of month, Oct.—June.	Nov. 4
College of Physicians,	1st Wednesday of month, Oct.—June.	Nov. 6
Section of Gynecology,	3d Thursday of month, Oct.—June.	Nov. 21
Section of Ophthalmology,	3d Tuesday of month, Sept.—May.	Nov. 19
Section of Orthopedic Surgery,	3d Friday of month, Oct.—April.	Nov. 15
Section of Otology,	1st Tuesday of month, Oct.—May.	Nov. 5
Section of Surgery,	2d Friday of month, Oct.—May.	Nov. 8
County Medical Society,	2d and 4th Wednesdays of month, Sept.—June.	Nov. 13
Neurological Society,	4th Monday of month, Oct.—April.	Nov. 25
Obstetrical Society,	1st Thursday of month, Sept.—June.	Nov. 7
Pathological Society,	2d and 4th Thursdays of month, Sept.—June.	Nov. 14

The Archives of Pediatrics will commence its thirteenth year with the January number under the business management of E. B. Treat, of New York, and under the editorial management of Dr. Floyd M. Crandall.

Dr. Thomas Keith, the distinguished British gynecologist, died at London in the first week of October, at the age of 70 years. He was a most successful abdominal surgeon.

Dr. Joseph D. Schoales died at Philadelphia on October 24th, at the age of 58 years. He was a surgeon in the Union Army during the Civil War.

Dr. James E. Garretson, the distinguished oral surgeon and the dean of the Philadelphia Dental College, died at Lansdowne, Pa., October 26, at the age of 67 years.

BOOKS AND PAMPHLETS RECEIVED.

Medical College of Ohio, Cincinnati. Seventy-seventh Annual Announcement, 1895-1896.

A Curious Anomaly of the Female Genitalia with Striking Resemblance to Some of the External Male Elements Converted by Plastic Surgery into a Woman of Normal Appearance. By W. A. H. Coop, M.D. Reprinted from the American Gynecological and Obstetrical Journal, 1895.

Annual Announcement of Trinity Medical College, Established 1850. Toronto, Session 1895-96. Toronto: Daniel Rose, Printer. When to Wear Glasses and How to Choose Them. By Arthur G. Hobbs, M.D. Pamphlet. Atlanta, Ga.

Scopolamin as a Mydriatic. By Arthur G. Hobbs, M.D. Reprinted from the Refractionist, 1895.

Rest: A Therapeutic Means in Gynecology. By Charlotte Blake Brown, A.M., M.D., San Francisco, Cal. Read before the Medical Society of the State of California, April, 1895.

Report of One-hundred-and-forty-five Operations done for the Removal of Ovarian Tumors and Pathological Conditions Associated with the Ovaries and Uterine Appendages Only. By A. Vander Veer, M.D. Pamphlet. Albany: C. F. Williams, 1895.

Formulaire des Specialites Pharmaceutiques. Composition. Indications, Therapeutiques, Mode d'Emploi et Doses. A l'Usage des Medecines. Par le Docteurs MM. Gautier et F. Renault. Paris: Librairie J. B. Bailliere et Fils, 1895.

Reprints from the Gross Medical College Bulletin, June, 1895. Faculty, Session, 1895-96. When to Pluck a Medical Student. Free Medical Education in Denver.

Bulletin No. 2. U. S. Department of Agriculture. Section of Foreign Markets. The World's Markets for American Products. The German Empire. Washington: Government Printing Office, 1895.

Civil Service Reform in State Institutions—Reorganization of the Medical Staff. By Boerne Bettmann, M.D. Reprinted from the Journal of the American Medical Association, 1895.

Thirteenth Annual Announcement of the Medical Department of Niagara University, 1895-96.

Six Magnet-operations for the Removal of Fragments of Iron from the Eye. By A. Barkan, M.D. Pamphlet, 1895.

Two Cases of Complete Blindness, Caused by Male Hysteria, By A. Barkan, M.D. Pamphlet, 1895.

Some Exceptional Features in Cataract-extraction. By Swan M. Burnett, M.D., Ph.D. Reprinted from the Virginia Medical Monthly, 1895.

On Ocular Affections in Syphilis of the Brain, with Report of Five Cases. By Charles Zimmerman, M.D. Reprinted from the Archives of Ophthalmology, 1895.

A Case of Disseminated Sclerosis, Presenting the Clinical Aspect of Primary Spastic Paraplegia with Atrophy of Both Optic Nerves. By Charles Zimmerman, M.D. Reprinted from the Archives of Ophthalmology, 1895.